THE BUILDER

A Journal for the Architect & Constructor

SEPTEMBER 28, 1928 No. 4469

LEADING CONTENTS

ARTICLES

	PAGE
Leader: The Pollution of the Air	499
Notes	500 & 501
General News	502
Competition News	502
Correspondence	503
"The Builder" Debate: X., Payment by Result	503
Royal Institute of British Architects	503
Modern Leaded Glazing. By Roland Morris	504
Notes on Illustrations	505
Meetings	505
Legal Section	515 & 516
Progress of Gas Heating	516-519
Book Reviews	519
Supply of Hot Water in Hotels and Similar Buildings. By A Heating Engineer	520 & 521
The Why and Wherefore of Ventilation. By A. M. Giles	521 & 522
Use of Oil Fuel for Heating Systems. By "F.I.O.B."	522 & 523
Combination Hot Water Apparatus. By F. W. Dye	523 & 524
Radiant Heating	524
Architects' and Builders' Inquiry Bureau	525
All-Electric House, Birmingham	525
Landlord and Tenant	526
New Buildings in London	526
Rates of Wages in the Building Trade	527
Contracts, Competitions, etc.	528-530
Proposed New Buildings and Other Works	530 & 531
New Cinemas	531
Trade News	531
Prices Current of Materials	532
The Scottish Builder	533
Institute of Builders	533
Current Prices for Building Work in London	534
Tenders	535-538

ILLUSTRATIONS

PLATES.

Rossall School Dining Hall. Messrs. Thomas Worthington and Sons, Architects.
South Front.
Detail of Vestibule.

	PAGE
Detail of Entrance Front, facing Quadrangle	498
General View of Interior, looking toward High Table	507
Interior, showing three Entrance Doors	508
Detail of High Table Recess	508
Interior, looking towards one of Boys' Entrances	509
Detail of one of Boys' Entrance Doors	509
Detail of Headmaster's Private Entrance	510
Cardinal Allen's Coat-of-Arms	510
Elevation	511
Stained Glass Windows. By Mr. Francis H. Spear, A.R.C.A.	512
Sketches of Detail. By Professor C. R. Cockerell	500
Table in Wrought-Iron. M. Paul Kiss, Architect	501
"Electric House," Battersea: Carved Clock Face. Mr. H. Hyams, F.R.I.B.A., Architect	502
A House at Thames Ditton. Messrs. Yates, Cook and Darbyshire, Architects. Garden Front	505
Entrance Front	513
Lounge	514
Dining Room	514
An All-Electric House, Birmingham. Mr. William T. Benslyn, A.R.I.B.A., Architect. General View of Exterior	506
Drawing Room	506
Illustrations of Modern Gas Equipment	517 & 518

Published every Friday

THE BUILDER LIMITED

CATHERINE STREET AND YORK STREET, ALDWYCH, LONDON, W.C.2

Telephone: Temple Bar 6251-2

86TH YEAR

Rossall School Dining Hall: Detail of Entrance Front facing Quadrangle.

MESSRS. THOMAS WORTHINGTON & SONS, Architects.

THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

VOL. CXXXV. No. 4469. SEPTEMBER 28, 1928.

THE POLLUTION OF THE AIR*

At a time when so many are enjoying the pure air of sea or country it may not be inappropriate to consider what is being done to impress upon the public mind the advantages of decreasing the pollution of the atmosphere caused by the various industrial processes inseparable from the march of civilisation and the demands for domestic comfort. Restrictive legislation has largely curtailed the offences of the factory chimney, but the prevalence of fogs over urban centres shows how much more remains to be achieved before the full benefits of pure air can be restored to the town dweller. There is, unfortunately, among crowded dwellings pollution which nothing short of more space can eradicate, and all the more necessary it becomes, therefore, to see that pollution due to solid matter discharged in smoke is reduced to a minimum.

The amount of solids carried up in the discharge from a chimney is probably seldom realised, and it may be supposed that factory regulations as to atmospheric pollution have reduced the evils from this source as far as practicable. Chimney temperatures, however, can be very high, and the consequent up-current or draught of air great enough to carry with it much more grit than is suspected. A method of extracting this grit which has recently come into prominence depends upon the installation of a centrifugal fan rotating at a high speed which throws the grit into a drum on its periphery, whence it falls down a pipe to the ground. We were recently informed that one large works chimneys produce in this manner a continual flow of grit from a four-inch pipe discharging almost full bore. If this can be taken as in any sense a generalisation it would indicate that there is yet much to be done and which can be done in this particular field.

It is, however, the domestic fire which is usually looked upon as the chief offender as a source of pollution and, having regard to its numerical superiority, it would seem reasonable to accept this view, although the individual consumption of fuel may be small. There are many who would advocate legislation adequate to deal at once with the consumption of raw fuel in the household grate, but the magnitude of the problem demands the collection of statistical matter to ensure that any restrictions imposed in the use of fuel really possess a proper basis. The investigation of atmospheric pollution has been the subject of research by the Meteorological Office since 1914, and we have before us the last report on this subject, published recently by the Stationery Office, giving data up to the end of March. This report, the 13th of the series, is issued by the Department of Scientific and Industrial Research, and contains the results of readings taken at eighty different stations in the United Kingdom. These stations are classified in four groups, (*a*) to (*d*), according to their increasing quantity of deposit. That a general improvement in the conditions is in progress is evident from the fact that, whereas in the first year of the tests, 1914-15, the stations ranking as (*a*) and (*b*) were 54 per cent. of the whole, last year 87 per cent. of the stations had attained positions in these two groups.

Curiously, the coal stoppage of 1926 appears to have had no effect upon the smoke pollution in London, though this is not the case generally, and it would appear that a great deal of the improvement is due to the increasing use of gas. The gas produced by the three great London companies is stated to have increased from some 46 millions to some 67 millions of cubic feet from 1915 to 1926, and though this increase cannot be strictly regarded as the equivalent of a decrease in the use of coal fuel owing to increase in population and improved standards of living, it does broadly show that the use of coal in the domestic grate is substantially less. Whether the use of smokeless fuel yet contributes largely to the decrease of pollution does not appear. This is a matter outside the scope of the report, but one upon which conjecture here is permissible. This fuel is not yet widely used, probably owing to its cost, which is hardly low enough to attract the ordinary coal user. When suitable markets are forthcoming for the bye-products of the partial distillation of coal, which is scarcely yet the case, we may expect an appreciable increase in the use of smokeless coal which should substantially contribute to the improvement of our atmospheric conditions.

There are, of course, various aspects of air pollution, that which makes the widest appeal being, as intimated, the production of smoke cutting off light, and by the multitude of small, solid particles leading to the production of fog. This is said to cut off also the ultra-violet rays to which so much importance has recently been attached. It has not yet proved possible to establish a definite relation between the amount of smoke in the atmosphere and the decrease in ultra-violet rays, but that smoke cuts off these rays is definitely shown by the report. A less obvious but not less important aspect of pollution is the production of sulphuric acid. All coal contains sulphur, and on combustion the sulphur-oxide gas produced is rapidly converted into sulphuric acid in the presence of moist air. Coal contains some 2 per cent. of sulphur, resulting in the production of about three times as much sulphuric acid, and most of this liquid descends on us and our buildings, and accounts in very large measure for the corrosion of metals and the disintegration of stonework. As coal gas purified for use contains only about one-eighteenth of the sulphur in raw coal, the benefit resulting from the substitution of gas for coal is obvious in dealing with this aspect of pollution.

It is impossible to enter here into the details of the report referred to which are largely statistical. These give readings month by month for each station, showing the amount of tar, carbonaceous matter, ash, and soluble salts, and the variation in these constituents are often striking. For example, Burnley leads in tar, the smallest deposit being found at Southport. Newcastle-on-Tyne produces the largest amount of other carbonaceous matter, Rothamsted the least. Sulphates are again highest at Burnley and lowest at Southport. St. Helens excels in chlorine, a reputation no doubt due to its chemical works, and Huddersfield takes the lead in ammonia. The value of all data is to be found in the underlying principles discovered in its critical analysis, and we assume that after a further reasonable term of years all this valuable and laborious work will lead to some generalisations which will enable legislative proposals to be formulated to improve our urban atmospheres, if not to rid us entirely of smoke.

In the meantime work in other fields continues, on the better use of coal and on the better construction of the grates which consume it. The much-abused English firegrate is, in spite of its defects, a very cherished possession of every household which can afford its wasteful consumption and the domestic attention it involves, and it is the envy of our Continental friends. Hence it is very unlikely that it will ever be banished from our homes. Rather should we look for an evolution in its construction and in the preparation of its fuel which will remove its shortcomings, and it may be that the growing facilities in the provision of electric power may provide some opportunity for smoke abatement on the lines indicated for chimneys of the factory type; but whatever may be the ultimate solution, it is only to be attained by the patient and careful collection of facts such as those recorded in the publication under review.

* "The Investigation of Atmospheric Pollution." 13th Report, 1927. Published August 9, 1928. H.M. Stationery Office. 6s. 6d. net.

NOTES

Newcastle House, Lewes.

THE preservation of such interesting old buildings as Newcastle House, Lewes, is, of course, a matter of very real concern to the profession, but it is much to be regretted that the authorities of towns in which such charming old buildings exist are so little concerned to preserve them. The historical and artistic interest of buildings in various towns all over the country should be of real moment to our town authorities, instead of being sacrificed to the supposed needs of traffic and commerce. The intervention of public bodies whose concern is the artistic life of the country may be very desirable, but there is evidently a not unreasonable hesitation to interfere. The lamentable fact we have to face is that our town authorities make little or no effort to preserve what adds so much to the interest and charm of our towns. We cannot dictate, we can only protest. The preservation of such buildings as Newcastle House is, says Mr. Howard Robertson, everybody's concern, but nobody's particular business.

Hand-wrought Ironwork for the Home.

THE exhibits of village craftsmen's work, and particularly the wrought ironwork by smiths, which have been seen at so many agricultural shows this summer, have given rise to many inquiries as to where this work can ordinarily be obtained. It is largely due to the efforts of the Rural Community Councils that so many smiths are now producing wrought ironwork of such a high standard — adapting traditional craftsmanship to modern requirements—and that they have been put into touch with the market for this work. These Councils, of which there are now fifteen, are composed of representatives of all the various bodies concerned with rural development in the areas of the Councils. Co-operative effort is thus facilitated and overlapping is avoided. In that branch of their activities concerned with rural industries the Councils work in close touch with the Rural Industries Bureau, and through their agency the Bureau has been able to give information and advice to a great number of isolated country workers. An important part of the Bureau's services to craftsmen is the issue of designs for wrought ironwork, and the list of working drawings now available—and for which there is a constant demand from country smiths—includes fire irons, baskets and dogs, hinges, knockers and latches, gates, weather vanes, etc.

Work for the Local Craftsman.

SEVERAL Councils, we understand, now finding that there is a definite need for some depot where prospective customers can see specimens of the work and give orders, are opening permanent showrooms, where the smaller pieces of ironwork—door and fireplace fittings, and so forth—as well as woodwork, basketry, hand-woven textiles, pottery and other products of rural craftsmen in the district, are on view. Country dwellers are beginning to appreciate the fact that all the ironwork fittings needed in a house can be made to their individual requirements by local craftsmen, at little more cost—and of far greater durability—than the stereotyped cast-iron fittings which we have been accustomed to put up with. The Rural Industries Bureau is able to put inquirers in touch with craftsmen who can carry out their requirements satisfactorily, and at the Bureau's offices at 27, Bedford-square, London, W.C.1, a small collection of specimens of ironwork, with photographs of other pieces, can be seen.

Science and Industry.

SOME of the observations made by Sir William Bragg in his address to the British Association on the application of science to industry have a bearing upon our recent leading article, "Man and the Machine." We pointed out that the development of craftsmanship was hindered by two elements, first the machine, and, secondly, by an even more destructive tendency, lack of appreciation of the personality of the old craftsmanship and a misdirected inclination merely to copy the end instead of learning the means by which the results were attained. Sir William Bragg, in the first place, defined the qualities that go to make craftsmanship as knowledge of materials, imagination and technical skill accompanied by perseverance, love of the work itself, and sympathy with the use that is to be made of it, and with the user, and he went on to say that the mind of a nation is expressed in its craftsmanship and that its craftsmanship was its very life and from a material point of view an index to its health. Sir William then spoke of the inevitable change in craftsmanship brought about by the introduction of machinery and methods such as mass production, but, as we understand his address, he looked to science to provide that element of imagination and knowledge characteristic of the craftsman.

Sketches of Detail. By Professor C. R. Cockerell.

An Old Chair in Llan-gor-wen Church

Mass Production. MASS production, he said, produced temporary lulls in the movement of imagination and knowledge, but for craftsmanship to fulfil its task of providing for the people, new ideas, new processes and new machines must always be in preparation and science assisted in providing those, whilst the nation most possess the means and will to improve, and this nation possessed a great asset for this in the exceptional qualities of its craftsmen as a whole. It may be true that in these days of machinery and mass production the imagination and knowledge possessed by the old craftsmen must be supplied by science, so to speak, in bulk, but the individual craftsman is not called upon, as he should be, to possess those qualities, so individuality is lost, and, although science may keep the nation as a whole moving, its artistic qualities must suffer.

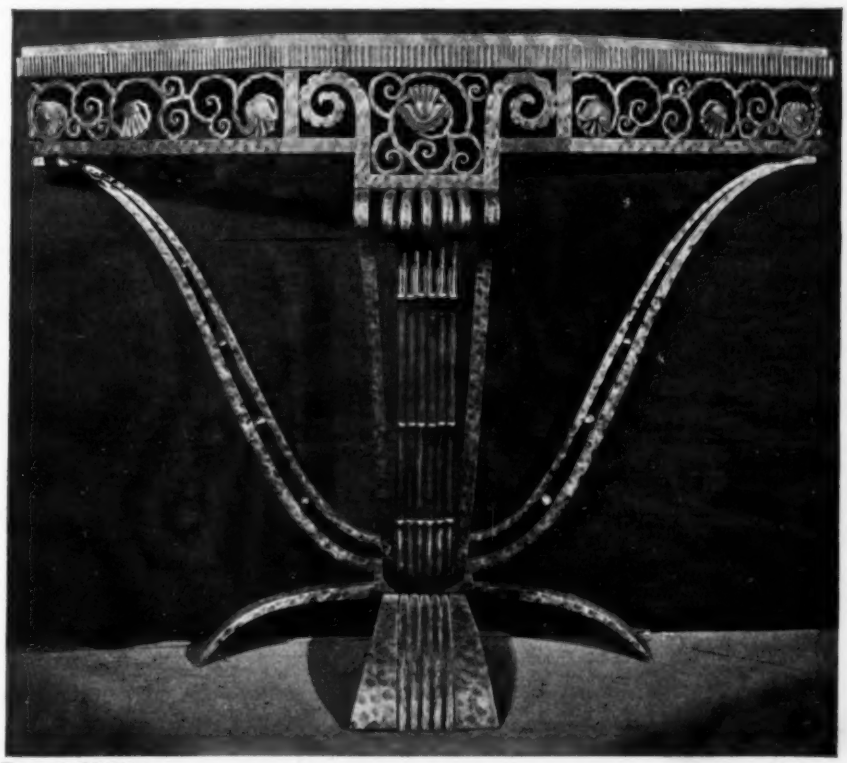
Subsidies. THERE is a good deal of discussion going on regarding the possible action of the Government on the question of subsidies. We do not range ourselves on the side of those who hope and expect that subsidies are to be a permanent institution. We cannot look forward with any degree of pleasure to a civilisation that must grant doles to itself for the provision of homes. It surely ought to be the desire of everyone to place house-building on a level with other commodities. To say that costs of houses are too dear is to say that we cannot afford to pay the price or the rental. That is merely one way of putting it; there is another version which in common parlance says "it's not worth it and I will do without." Nevertheless we are determined not to go without houses; hence the subsidies. The dangers are obvious. We may keep building costs permanently high so that we may never be able to afford a house. We may even cease to regard the provision of a home as a fundamental necessity.

The Objective. No one disguises the fact that equilibrium between building costs, rentals and earnings is a desirable aim, and that equilibrium is to be sought in falling costs of building. (At least no one believes now that high costs of building are to be met by an increase in wages for everyone.) A shortage connotes a monopoly. The continuance of the subsidy, therefore, must be a nice adjustment between a stimulus to encourage building and the desire to lower building costs.

A New Bridge. THERE is a hamlet in a remote part of Pembrokeshire which consists of little more than a dozen cottages clustered about a mountain stream, a bridge and an inn. Lately a motor 'bus on its way somewhere else, took to using the bridge, which was soon pronounced unsafe, pulled down and rebuilt. The old structure was a single span of stone, crowned with low parapets, about a foot and a half wide, in the crevices of which grew flowers and little ferns. The new bridge is also a single span, but longer and built of stone, but more massively. Instead of the low stone parapets, however, there are white concrete railings, on which nothing can grow. It is a far better and more useful bridge than the old one; but it has a defect, as an old inn-keeper pointed out. "It is a good bridge," he said. "It is wide. It can carry the heaviest lorries. But it is not so *cosy* as the old one. *We cannot sit on it.*"

The Human Touch. COMMENTING on this, a correspondent says: "So, in spite of the new structure's strength and usefulness, the life of the hamlet has suffered a loss because of it. Its people, old and young, can no longer gather on the friendly parapets to talk and watch the fish rise and the world go by. And this need not have been so. It should be possible for those who have the skill to create strength and usefulness to add also the human touch, without which these things are valueless. It should be possible; and yet everywhere to-day life is poorer for the lack of it. How much of our building, in spite of its real efficiency, suffers from the fact that it has no crevice in which a flower may grow, and no place where gossips may sit."

Architects and Artists. LOOKING back upon the speculations in the public Press upon the election of a President for the Royal Academy, one of our correspondents reminds us that they were of interest on account of the observations upon artists and architects. Architects, we were told, were less likely to prove definitely hostile to the modern spirit in painting than painters trained in the academic tradition. We agree with our correspondent that this is rather a sweeping generalisation, argued evidently from the particular to the general. Furthermore, we read that the architect's training has a practical business side, and that there is an important business side even to an institution like the Royal Academy. Here we have the commentary upon the artistic mind—by implication. To the architect who is inclined to apologise for his business acumen as a lapse from grace there is an obvious moral.



From *Architecture.*

Table in Wrought-Iron.
M. PAUL KISS, Architect.

GENERAL NEWS

Professional Announcements.

Mr. W. Philip Reynolds, O.B.E., F.F.A.S., quantity surveyor, is about to take into partnership Mr. William F. Young, P.A.S.I., chartered quantity surveyor, who has been associated with him in practice for some time past. The partnership will date from October 1, and will be carried on under the name of Reynolds & Young, quantity surveyors, at Premier House, 150, Southampton-row, London, W.C.1. Telephone: Terminus 6781.

Mr. W. S. May, F.S.I., quantity surveyor, has taken into partnership his brother, Mr. R. C. May, A.F.A.S., as from October 1. The practice will be continued under the title of May & May at the same address as hitherto—9, New-square, Lincoln's Inn, London, W.C.2. Telephone: Holborn 5548.

The resident architect of the Winter Gardens Co., Ltd., Blackpool, will be pleased to receive trade catalogues.

Mr. Joseph Swarbrick's Estate.

Alderman Joseph Swarbrick, F.R.I.B.A., M.I.C.E. (74), of Moorfield-road, West Didsbury, Manchester, architect and surveyor (net personalty £1,390), left £2,000.

New R.C. Church, Broadstairs.

Funds are being raised towards the cost of building a new Roman Catholic Church, the outlay of which will be about £15,000. About £5,000 is now in hand. Plans have been prepared by Sir Giles Gilbert Scott, R.A., Gray's Inn-square, W.C.

League of Nations' Building, Geneva.

The Geneva Municipal Council on September 20, after a discussion lasting over an hour, decided by a unanimous vote to grant the League of Nations the necessary ground in the Ariana Park, on which to erect the new League Palace. The Socialist members finally agreed to the proposal on the condition, however, that the park shall remain open to the public.

Proposed Extension to the Tate Gallery.

It is understood that Sir Joseph Duveen has agreed to provide new galleries at the Tate Gallery to contain the Turner drawings so nearly ruined by the Thames flood in the spring. This is additional to Sir Joseph's offer to provide a gallery for modern foreign sculpture, which was accepted by the Trustees and the Treasury. Plans are under discussion at the present moment.

Desecration of the Countryside: National Conference at Leicester.

A national conference will be held at Leicester on October 12 and 13 with the object of directing public attention to the need for immediate action to save the countryside, its roads and its old towns and villages from unsightliness. Among the societies taking part in the Leicester conference—the Countryside and Footpaths Preservation National Conference and Exhibition—are the following:—The National Trust; the Society for Checking the Abuses of Public Advertising; the Footpaths Preservation Society; the Council for the Preservation of Rural England; the Federation of Rambling Clubs. Other organisations which will be taking part—not directly—but by affiliation to the component societies, include:—The Royal Institute of British Architects; the Surveyors' Institution; the Royal Society of Arts; the Town Planning Institute; the National Housing and Town Planning Council, and the Institute of Builders.

St. Paul's Bridge Scheme Variations.

As foreshadowed in *The Builder* for August 31, the Bridge House Estates Committee of the City Corporation have decided to recommend the building of St. Paul's Bridge with a new line of approach on the northern side. If the committee obtain the sanction of the Court of Common Council, fresh application to Parliament will be necessary. A report on the subject was signed at Guildhall on Tuesday, and will be brought up to the Common Council at the next meeting. The old scheme will be recommended so far as the bridge itself is concerned. The variation will start from Queen Victoria-street. From this point the viaduct will be continued and the deviation to the east commenced. Knightrider-street, Cannon-street, and Watling-street will be crossed by viaduct. Here the approach will turn west and descend by a convenient gradient to Cheapside, where the crossing will be on the street level. In this way a right-angle crossing will be avoided. Such a line has been taken as to avoid the church of St. Augustine, which the approach will leave on the west. Thus there will be 200 ft. between the suggested new approach and the choir of St. Paul's, and 300 ft. between it and the dome area.

"Electric House," Battersea: Carved Clock Face.

MR. H. HYAMS, F.R.I.B.A., Architect.

COMPETITION NEWS

Proposed Competition for Wigan Cinema.

The Savoy Cinemas (Northern), Ltd., have acquired a site in Standishgate for the erection of a new cinema. We learn that a limited competition for architects accustomed to the designing of cinemas may be held for the appointment of architect for this scheme.

New Hospital, Wakefield.

Designs by Messrs. Massie & Holdsworth, of Wakefield, for a new women's hospital, to be known as the Ann Canning Hospital for Women, have been accepted in competition with seven others. The adviser to the hospital authorities was Mr. Eric Morley, F.R.I.B.A., of Bradford.

COMPETITIONS OPEN.

	Particulars published in "Builder."	Sending in date.
Concrete houses. Prizes of £100 and £50 (to Architects) and £50 and £25 (to builders) for best all-concrete houses erected in 1928. Assessor, Mr. E. Guy Dawber, A.R.A., Secretary, British Portland Cement Association, Ltd., 20, Dartmouth-street, S.W.1	June 8	—
Public Baths and Washhouses at Carrs Crofts, Armley, Leeds, for T.C. Premiums of £300, £200, £100. Mr. Henry Price, A.R.I.B.A., Assessor. Mr. T. Thornton, Town Clerk. Dep. £1 1s....	July 27	Oct. 29
Elevation of proposed buildings in High-street, Newport (Mon.), for C.B. Mr. C. F. Ward, F.R.I.B.A., Assessor. Premiums 300 guineas and 150 guineas. Borough Architect, Town Hall. Dep. £2 2s.	Aug. 10	Oct. 15
Council School at Charlemont, for the West Bromwich Local Education Committee. Mr. H. T. Buckland, F.R.I.B.A., Assessor. Premiums: £150, £100, £50. Mr. A. Lewis, Education Offices, Highfields, West Bromwich. Dep. £1 1s.	August 17	Dec. 31
Wyggeston Grammar School for Boys, for Leicester E.C. Sir Felix Clay, Bt., F.R.I.B.A., Assessor. Premiums: £100, £75, £50. Mr. F. P. Armitage, Town Hall, Leicester. Dep. £2 2s.	August 17	—
R.I.B.A. Competition for hypothetical Design of a Garage in the theatre area of London. First premium £350, second £140. Messrs. W. J. Tapper, P.R.I.B.A.; Robert Atkinson, F.R.I.B.A.; T. P. Bennett, F.R.I.B.A.; W. Rootes; and J. E. Forbes, will adjudicate. Apply, 9, Conduit-street, W.1. Some recent garages were illustrated in the May-June issue of ARCHITECTURE	August 24	—
Proposed art gallery at Christchurch, N.Z., for the City Council, to cost £25,000. Premiums of £100 to each of three designs selected from entrants. Winner as architect. Mr. S. Hurst-Seager, F.R.I.B.A., assessor. Conditions from High Commissioner for N.Z., Strand, W.C.....	Sept. 7	1929 Feb. 13
Columbus Memorial Lighthouse, Dominica, for the Pan-America Union. Ten designs selected will receive £400 each; eventual winner £2,000. Other premiums £1,500, £1,000, £500, and six of £200. Conditions from Mr. Albert Kelsey, Washington, D.C.	March 2 Sept. 14	

A Correction.

We regret that in our review last week of "Working up a Bill of Quantities" the name of the author, Mr. Arthur J. Willis, was wrongly given.

New Hostel at Oxford.

The governors of Exeter College have acquired a site near the college for the erection of a hostel for undergraduates. The architect is Mr. T. Harold Hughes, F.R.I.B.A., 185, St. Vincent-street, Glasgow.

CORRESPONDENCE

[While we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

Borough Surveyors and Architecture.

SIR,—The question raised by "Architectural Assistant" in your issue of the 21st inst. has been discussed frequently in recent years, but so far no steps seem to have been taken to remedy the evil. With all our increased facilities for architectural education, it certainly seems strange that municipal bodies entrust the control of so much architectural work to borough surveyors who, in many cases, have no notion of the most elementary principles of design. Even where the head of such a department is a fully qualified architect, he tends to become a mere organiser, and millions of pounds worth of architectural work must be done annually, under such conditions, all over the country.

I note that the Royal Incorporation of Architects in Scotland has petitioned the Secretary for Scotland that the new National Library and new Government Offices for Scotland should be thrown open for competition among private architects. This should certainly have the support of the Royal Institute.

The standard of work done by Government and Municipal Departments has risen steadily in recent years, but it seems unwise and unfair to highly trained practising architects that the erection of large important public buildings should be entrusted to men who have no special understanding of design and who are in no way entitled to credit for work done by, in many cases, temporary assistants.

B. B.

"Headquarters of an Architectural Society."

SIR,—The winning design for a "Headquarters of an Architectural Society," by Messrs. Hartland and Clare, illustrated on pp. 472-3 of your last issue, is no doubt excellent so far as it goes. Might one inquire, however, where the following accommodation is to be found?—

(*a*) General office for six or eight clerks.
(*b*) Office for assistant secretary and/or accountant.
(*c*) Office for editor of publications and staff.

All the above are necessary and require a very considerable amount of room. This might be provided by (i) turning the "lounge" into a general office (thus giving easy access to the secretary); (ii) turning the "cloak-room" on ground floor into an assistant secretary's office and using the "crush room" for cloak-room; (iii) using the "committee room" on first floor as editorial offices, and letting committees meet in the council room. That is to say, the premises which won the competition might be adapted easily enough; but such adaptation should be done, surely, before and not after judgment.

ARCHITECT'S SECRETARY.

[The winners in this competition provided all the accommodation prescribed in the programme. The absence of the offices mentioned by our correspondent is, therefore, the responsibility of the promoters, not the architects.—ED.]

Invitation to Tender.

SIR,—Your correspondent, J. S. H., is serving a good purpose in ventilating a grievance builders suffer in tendering for work. I know a case where a job was advertised by a Metropolitan Borough Council, and tenders were received from 20 builders for a job costing £1,931. Surely the Council, knowing the size of the job, might have closed the list when they had received, say, five or six applications for particulars.

"ONE OF THE TWENTY."

"THE BUILDER" DEBATE—X

PAYMENT BY RESULTS.

SIR,—I am not a little disappointed at "Negative's" reply to my first article, particularly as I note that he is himself an operative, from which class the greater amount of opposition seems to come. Why this should be so is a complete mystery to me and to a good many others, because it is so obviously the efficient operative who would thrive under the scheme. I had hoped that the mystery would be at least partially dispelled by "Negative's" reply, but, unfortunately, in it I can see nothing but a bare statement of opinion with no logical argument to support it. I have always had the opinion that the real root cause of the operatives' repugnance for a system of payment by results lies in a false conception of the meaning of "humanity"—a much-abused word that stung Mr. Romfrey to snort: "Humanitomtitty!" It becomes a tragic absurdity when efficiency is deliberately handicapped to await sloth and inefficiency.

For many years the building trade has lulled itself into a false belief that building costs have reached a stable economic level since the war, and that it only waits for the community to adjust its sense of values to meet it. It is true that building costs have remained at much the same level for some years, but it does not follow that it has been an *economic* level. All the time that people find it impossible to pay a rent that represents a fair return for capital outlay; and all the time that people are reluctant to go to the expense of building at all until necessity forces the issue, it surely cannot be said that, related to other economic standards in force, the building trade is in tune with the times. To urge that it is right and all other standards wrong is on a par with the recruit who suggested that the battalion should change its step to agree with his. There is no doubt whatever that building, from being what it should be—a part of daily existence—has become something approaching a luxury trade, to the disaster of all who have to earn their living by it.

It is all very well for "Negative" to say that efficiency and organisation will set all things right, but we all know that these things will not come just by calling the words from the house-tops, and that a fair proportion of building businesses are inefficient, and have no organisation worthy of the name. The question is how to make it possible for the average builder to lower his labour costs without sweating his employees with low pay.

Experience of post-war building shows that the men as a class are not getting through the amount of work in a given time which pre-war experience shows they were capable of. The average physique remains much the same: the average intelligence is probably higher. What is lacking? Surely it must be the will to work; and, if so, we must find some incentive that will restore it. I suggest payment by results as an obvious incentive to this end. What could be more likely to produce it than a knowledge that an extra effort means extra reward, and that a lazy day means so much less to live on?

"Negative" gives as his most reasonable argument against this system the difficulty of arriving at the scope of a job owing to the inevitable variations of building. But surely a workman is just as capable as a builder, of contracting to carry on his trade at schedule rates upon which his tasks can be measured and valued as they are completed. If this is all there is against it, there is very little in it indeed.

I beg "Negative" not to assume that I am indifferent to the calls of humanity, for it is my concern for the unemployed operatives, the idle building yards and the architects with little enough to do, not to mention the still great numbers of folk who cannot afford a home of their own, that emphasises the fact before me that something drastic must be done to set the building trade properly on its legs again.

I know, and have seen innumerable instances, of the scandalous slackness that goes on on building jobs; and the happy-go-lucky way with which many men qualify for a day's pay. Such things should not be possible among sensible men, and can only be possible while the day's pay bears no relation to the energy expended.

I cordially agree with "Negative's" facile list of the essential factors in a prosperous industry: management, craftsmanship and humanity. But I cannot see what bearing these have upon the question at issue since each of the three must find its place in any system depending upon any system of reward. Management must always be efficient, and its efficiency will depend most on means of working, of which, I claim, payment by results is the best. Craftsmanship will not suffer under the system unless management is at fault: and humanity finds its place just as surely unless it is seriously claimed that man has the right to eat whether he work or not. I am sure "Negative" has more to add to what little he has already said.

POSITIVE.

THE R.I.B.A.

Lectures on Architectural Practice.

Suggestions have been received from time to time that a series of lectures on modern methods of practice should be arranged for the benefit of members of the R.I.B.A. who are practising architects, and the Council, on the recommendation of the Science Standing Committee, have now agreed to hold a series of three lectures at the R.I.B.A to test the position and ascertain if there is a real demand for them. The subject selected is "Party Walls, Contracts and Specifications," and the lectures will be given by Mr. W. E. Watson, F.R.I.B.A., barrister-at-law. The first is arranged for Thursday, November 8, and the remaining ones will be held on Thursday, November 22, and Thursday, December 6, each commencing at 6.30 p.m. No charge will be made for admission, and members are cordially invited to attend. If the first series is successful and well attended, it is hoped to arrange a further series early in 1929 on "The Strength of Materials."

Exhibition in the R.I.B.A. Galleries.

An exhibition of black-and-white and colour work by members of the R.I.B.A. will be held in the R.I.B.A. Galleries from Monday, October 1, to Thursday, October 11, inclusive. The exhibition will be open free daily between the hours of 10 a.m. and 8 p.m. (Saturday 5 p.m.).

R.I.B.A. Problems in Design, 1929.

We have received a list of the R.I.B.A. problems in design for the year ending December 31, 1929. Copies of the list may be obtained free on application at the R.I.B.A. The subjects are as follows:—

CIII.—(*a*) A design for the Principal Staircase for a Country House; (*b*) Working drawings for subject number CI, a Flight of Steps.

CIV.—(*a*) A design for a Palm Court for an Hotel; (*b*) Working drawings for a subject number CII, a Garage.

CV.—(*a*) A design for a Church Tower; (*b*) Working drawings for subject number CIII, the Principal Staircase for a Country House.

CVI.—(*a*) A design for a Pair of Semi-detached Suburban Houses at the Corner of two roads at right angles to each other; (*b*) Working drawings for subject number CIV, a Palm Court for an Hotel.

CVII.—(*a*) A design for a Club Building for Boy Scouts to be run by the old boys of a public school; (*b*) Working drawings for subject number CV, a Church Tower.

CVIII.—(*a*) A design for a Small Housing Scheme in a Mining District of Kent; (*b*) Working drawings for subject number CVI, a Pair of Semi-detached Suburban Houses.

MODERN LEADED GLAZING

By ROLAND MORRIS.

LEADED glazing as a decorative as well as a utilitarian feature in modern buildings is a practically unexploited field for design. By design, in this sense, is meant work of a somewhat more serious intent than most examples of leaded glazing to be seen even in luxuriously decorated buildings. Perhaps one reason for this is that no artist sufficiently eminent in the public eye has yet associated his name with this class of work. This is not so much the case in Paris, where designs in leaded glazing of no less an artist than Henri Matisse adorn the main entrance to the Luxembourg Museum. Great impetus in this direction has, of course, been given to French glazing by the "Exposition Internationale des Arts Décoratifs" of 1925, which contained examples of the most varied ways in which glass and lead can be combined to please the eye, and at the same time admit light without sacrifice to efficiency.

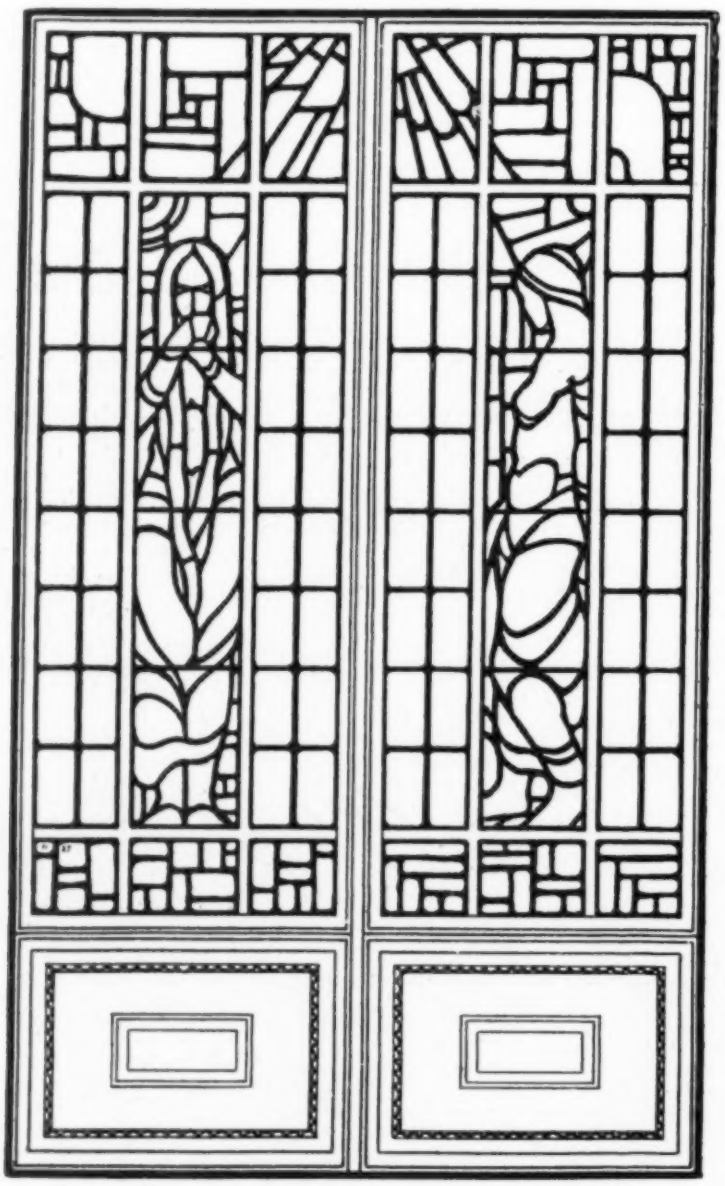
Where no painted glass at all is used as is generally understood by the term "leaded glazing," the nature of the craft compels a somewhat rigid style of simple line-drawing which leads very naturally to conventions of a mild or severe character according to the taste of the designer. Outline is only one consideration. The way in which a form is leaded across or connected to its neighbour or background is to a large extent that which constitutes a good design in this medium and, incidentally, affords the artist a fascinating means of expressing his ideas. But craft limitations must be respected, and it is obviously poor craftsmanship to allow many shapes which will give the glass cutter cause for grievance.

Too often in the past, leaded glazing has been confined to monotonous repetition of a geometrical pattern, or to the incorporating of a heraldic device which, if heavily coloured, obtrudes unpleasantly on the eye. It is far more satisfactory to fill a window or glass partition, etc., with lightly-tinted glass, the design of which is first and foremost decorative at a distance, and which, on closer inspection, invites a more detailed interest. Such is the tendency of some of the newer leaded glazing and secular stained-glass work.

Purely abstract designs can be used quite successfully when the openings to be filled are small. In large public buildings, such, for example, as the swimming baths at Bermondsey (see our issue for October 14, 1927), containing appropriate subject-matter in glazed lunette-shaped openings, the effect of a more ambitious type of glazing is very successful, provided the designer does not try to suggest the illusion of a picture in glass. Attempts of this kind have never proved so successful as those of glass designers who work in the technique that they naturally acquire through being conversant with the practical side of the craft. Most of the glazing in the Paris exhibition illustrated very fairly this feeling.

In order to introduce more decorative glazing into our buildings, the present standard of this work must improve, since the cost involved, though quite reasonable where the case of decorating a large building is concerned, is frequently considered unjustified because of the indifferent effect often produced. It therefore behoves our able young artists, evidence of whose talent is not lacking in other directions, to raise the status of modern leaded glazing.

"The Three Sisters," Window in Leaded Glazing.



French Doors in Bronze and Leaded Glazing.

SCOTTISH NATIONAL LIBRARY

The council of the Incorporation of Architects in Scotland, representing almost 800 practising architects, has sent a letter to Sir John Gilmour, the Secretary for Scotland, in which the following passages occur:—

The Incorporation respectfully submits that the new National Library and Sheriff Court, Edinburgh, are buildings of outstanding importance, and it is hoped therefore that an adequate opportunity will be given to architects in private practice to submit designs therefor by means of open competition or otherwise.

In regard to the Calton Gaol site, the Incorporation understands that it is the intention of the Government to demolish the existing buildings on this area in the course of the future, and that ultimately a great block of Government offices is likely to be erected on the site to house all the Government departments which are at present scattered throughout the city in unsuitable premises. This scheme will doubtless take many years to develop. The Incorporation ventures to suggest that schedules of requirements of the proposed buildings should be prepared by the Office of Works, and that subsequently the general lay-out of this important area and the design of the buildings thereon should also form the subject of open competition.

The Incorporation would, moreover, respectfully remind you in this connection that the scheme of a National Library for Scotland has been rendered possible only by the splendid munificence of a citizen of Edinburgh, and that he has stipulated that he is to be consulted in regard to the design of the building. The Incorporation feels sure that Sir Alex. Grant's wish is that the buildings should be something more than an efficiently planned book store, and that they should have some real imaginative quality worthy of so great an opportunity.

It is the strong feeling of the whole profession that the buildings referred to are in a category apart, and that the best architectural skill and craftsmanship available should be utilised in connection with so important a national scheme.

ILLUSTRATIONS

PLATES

New Dining Hall, Rossall School, Fleetwood.

Unlike many of the halls which the public schools have built since the war, the Rossall Hall has not been raised as a War Memorial. It is part of a larger scheme of buildings which the governors have undertaken, and has been designed by Professor Hubert Worthington, of the firm of Messrs. Thomas Worthington and Sons. It will therefore be a year or two before the general effect of the building scheme can be fully judged. The new dining hall presented some interesting structural problems. Its site is close to the sea on the north Lancashire coast, near Fleetwood, so that it was not safe to go down deep with the foundations for fear of running sands. The foundations accordingly are in the form of shallow concrete rafts. From these rise the reinforced concrete columns which are an important feature of the interior, tied together by reinforced concrete beams which form the entablature. The main structure of the building is thus a rigid frame. The external walls are of Ruabon silver-grey bricks in two tones, the soft and beautiful quality of which is emphasised by the white pointing. The base, string-course, coping, and dressings are of Portland stone, and there is vigorous heraldic and ornamental stone carving in Portland stone. The plan is straightforward. At the north end is the school entrance, and at the south the headmaster's, with a raised dais and high table for himself and the prefects. The architects have placed the servery on the east side of the building, so that the food is distributed fanwise from the kitchen, through the servery and so to the dining hall. It is difficult to obtain service in a hall of such a size if the servery is not placed on a long side of the building.

The hall accommodates 500 diners, and is 140 ft. long. The main body of the hall is panelled in teak, the high table recess in English oak, and the floors, benches and tables are teak. The servery has a flat roof, so that ample windows for light and ventilation are possible on both sides. There are five of these windows on each side containing stained glass emblems of the ten houses. The ceiling is plaster, with wide, shallow flutes running from side to side. The walls above the panelling are rough plaster, colour washed to a warm parchment colour and the columns and ceiling a lighter cream colour.

The general contractors were Messrs. L. Brown and Sons, Ltd., and the following were sub-contractors :—Messrs. Earp, Hobbs and Miller, stone carving, plaster modelling and general wood carving; Alan Durst, special carving over entrance doors; H. Spear, heraldic glass; Edgar Brandt, bronze work; S. and J. Smethurst, Ltd., demolition, excavation, foundations, dampcourses and asphalt; Matthews and Mumby, Ltd., reinforced concrete; J. C. Edwards (Ruabon), Ltd., silver-grey bricks; W. Macdonald and Co., structural steel; Velhinelli, slates; Ford and Ramsay, partitions; Henry Hope and Sons, Ltd., lead lights, cast-lead rain-water heads and casements; E. B. Burgess and Co., wood-block flooring; G. N. Haden and Sons, Ltd., central heating and ventilation; Drake and Gorham, Ltd., electric wiring; T. Lightfoot and Co., plumbing; Morrison, Ingram and Co., sanitary fittings; Laidlaw and Thomson, door furniture; Haywards, Ltd., iron staircases; Arkright Bros. (Blackpool), Ltd., plaster; G. Jackson and Sons, Ltd., decorative plaster; L. Brown and Sons, Ltd., joinery and tables and benches; Henry Harding and Sons, stonework; J. and H. Patteson, marble; Conway and Co., tiling; Heal and Sons, chairs. The photographs which we give this week are by Messrs. Stewart Bale.

House at Thames Ditton.

The external walls of this house are faced with "Atlas White" cement, and the roof is covered with red Italian pantiles, which form a pleasing contrast with the colour of the walls. The elevations have been designed in a simple and restrained manner, and a feature is the wide overhanging eaves, which give on a bright day a happy effect of light and shade. The interior has been decorated in a plain, simple manner, the lounge being partly panelled in oak, above which is stuc treatment with a simple cornice and ceiling over. The floors generally are of oak wood blocks. Central heating has been installed, together with up-to-date labour-saving devices.

The general contractors were Messrs. The Edwards Construction Co., Ltd., and Messrs. Paul Turpin executed the panelling and stuc treatment in the lounge; the oak block floors were supplied and laid by the Acme Flooring and Paving Co., Ltd.; the whole of the terrazzo flooring in the domestic quarters and bathroom was executed by Messrs. Diespeker and Co.; the metal casements and the leaded lights were supplied and fixed by Messrs. W. James & Co., Ltd.; the central heating was carried out by Messrs. Mumford, Bailey and Preston, and Messrs. Ames and Finnis were responsible for the roof tiling. Messrs. Yates, Cook and Darbyshire, of 43, Great Marlborough-street, W.1, were the architects.

MEETINGS

FRIDAY, *September* 28.

Institution of Municipal and County Engineers. Yorkshire District Meeting. At Goole. 12.30 p.m.

THURSDAY, *October* 4.

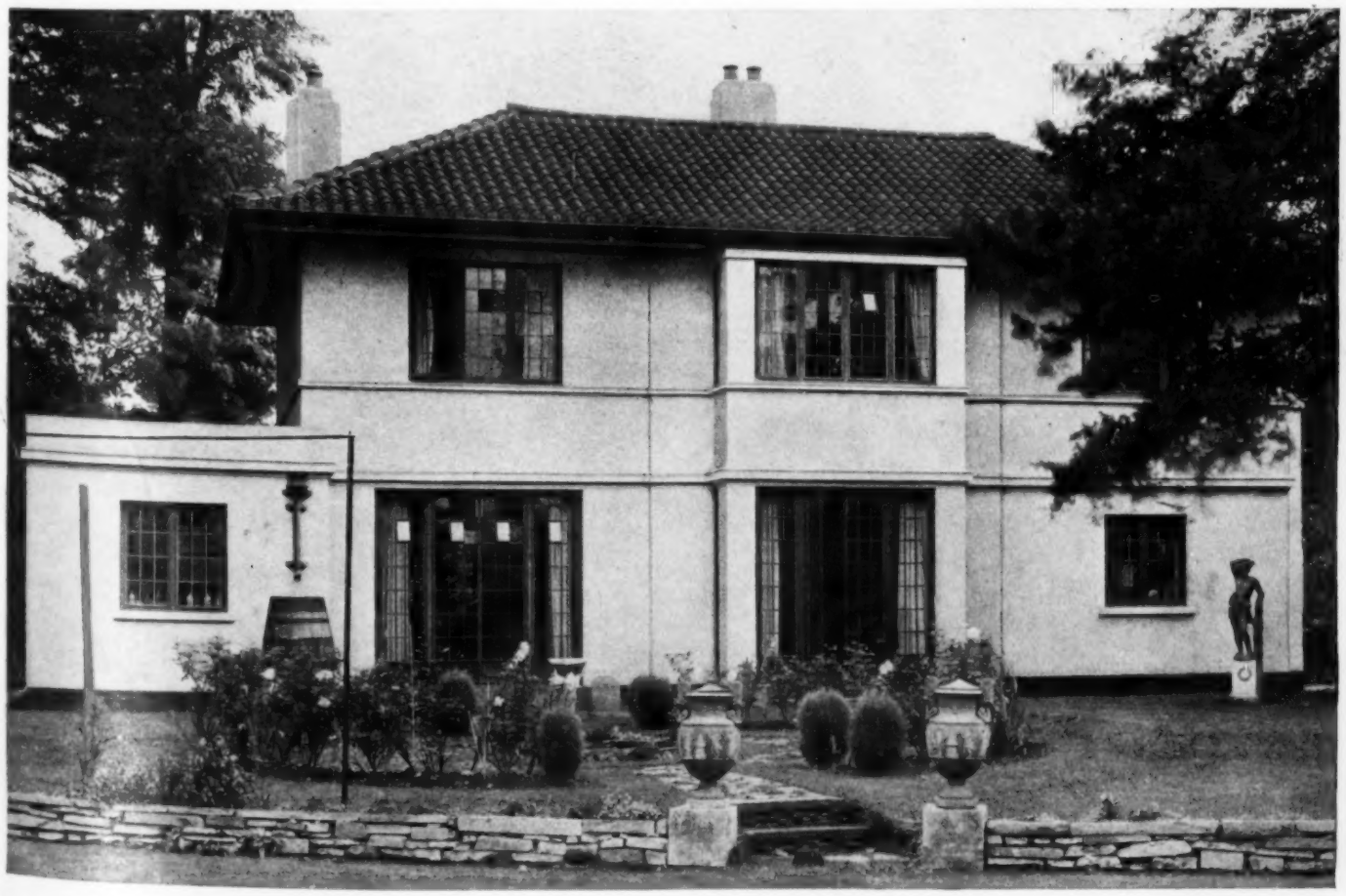
Institution of Municipal and County Engineers. Scottish District. At Kilmarnock. 10.45 a.m.

FRIDAY, *October* 5.

Royal Sanitary Institute. Mr. S. W. Mobbs on "Economy in Refuse Disposal." At the Town Hall, Lowestoft. 5 p.m.

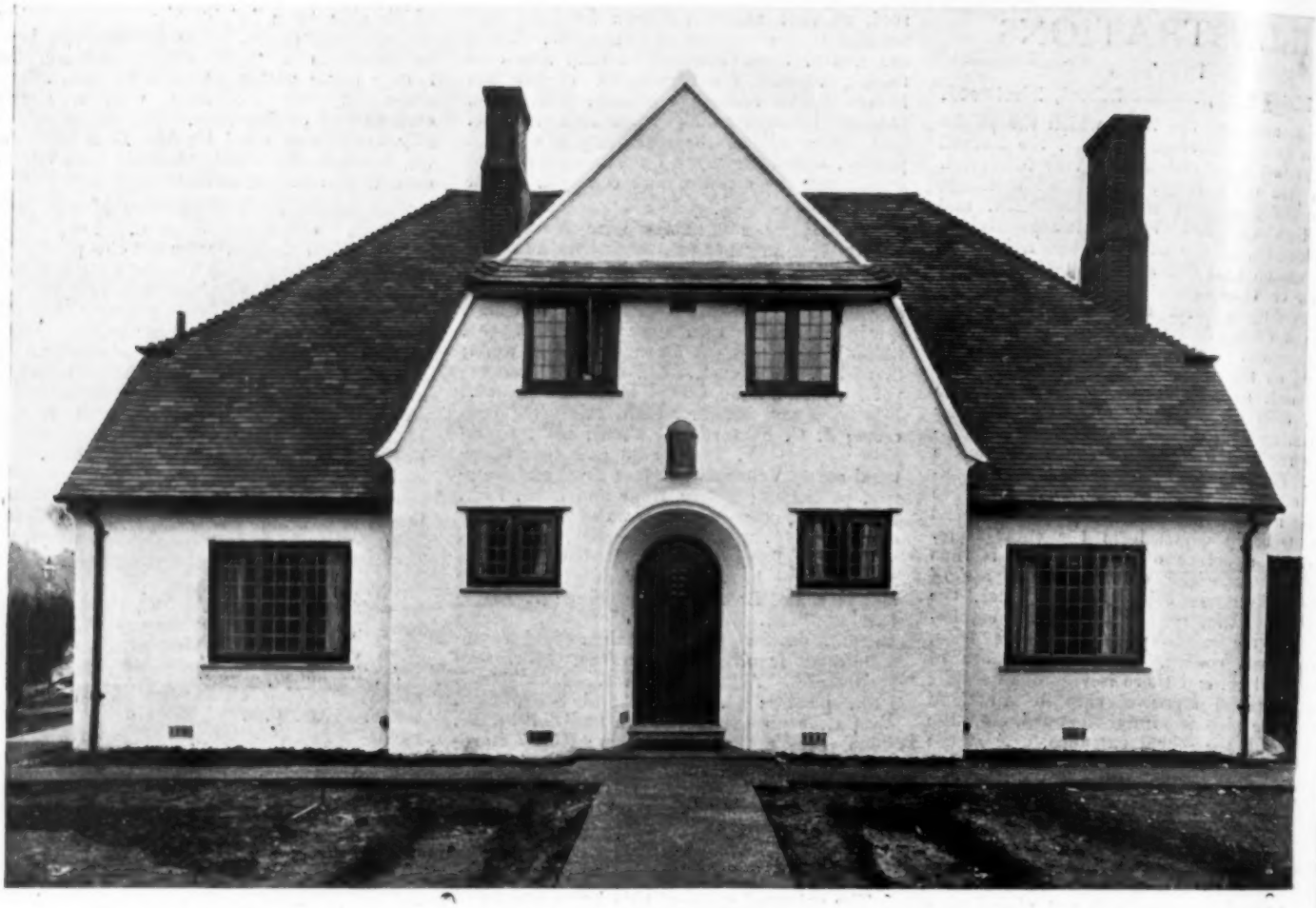
THURSDAY-SATURDAY, *October* 4-6.

Town Planning Institute. Annual Meeting. At Edinburgh.



A House at Thames Ditton: Garden Front.

MESSRS. YATES, COOK & DARBYSHIRE, Architects.



GENERAL VIEW OF EXTERIOR.

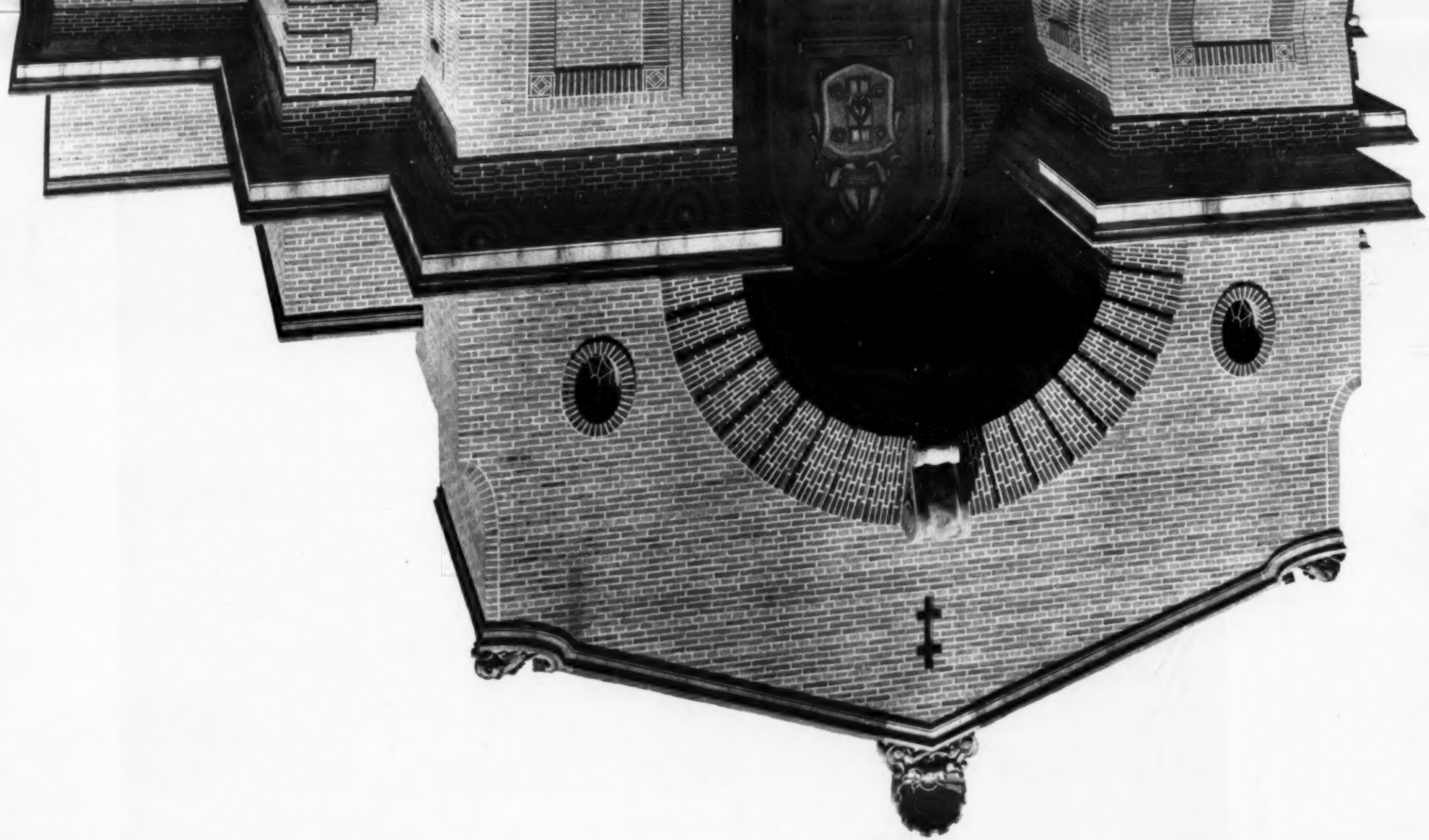
DRAWING ROOM.

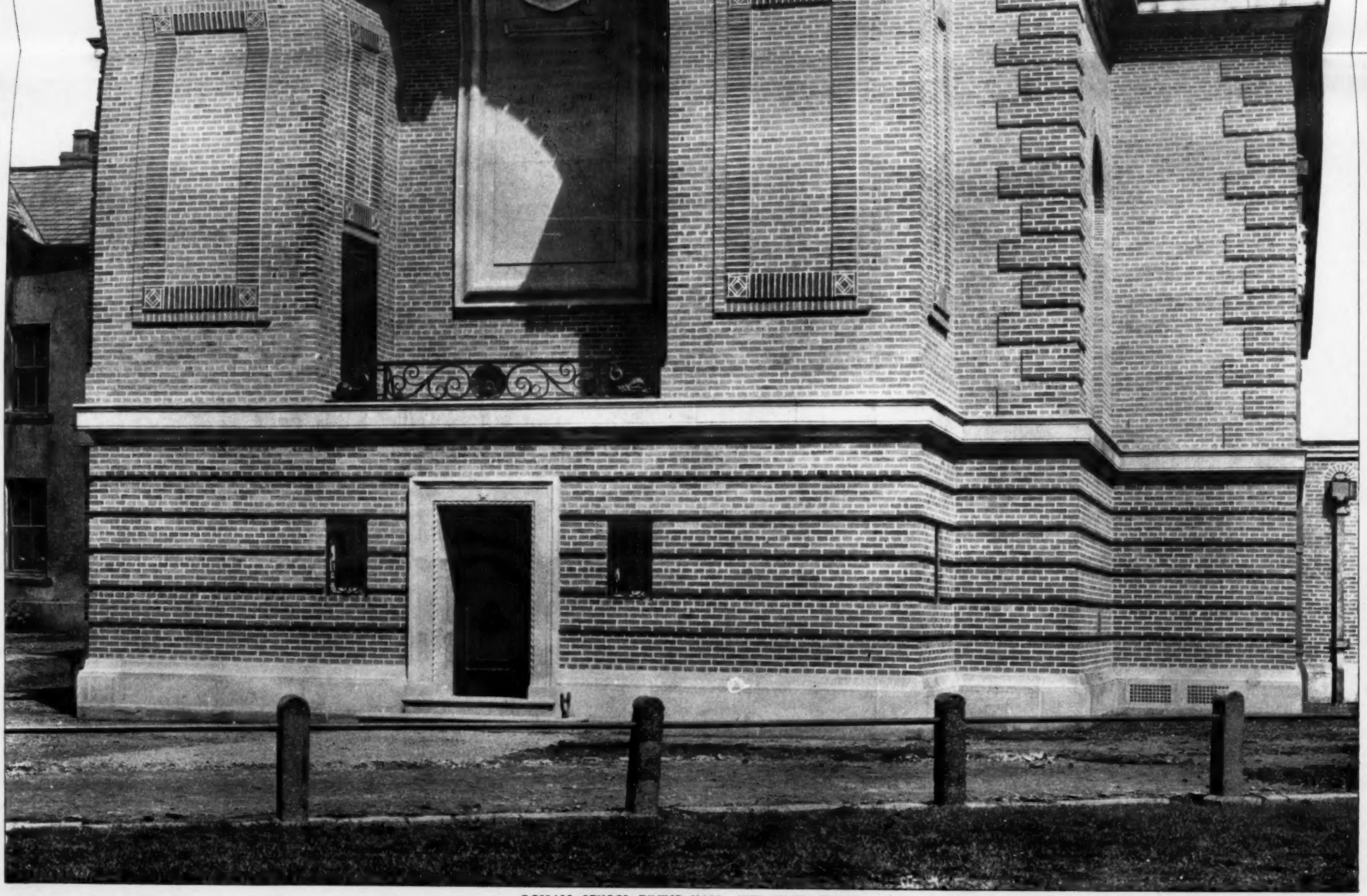
An All-Electric House, Birmingham.

MR. WILLIAM T. BENSLYN, A.R.I.B.A., Architect.

Rossall School Dining Hall: General View of Interior, looking towards High Table.

MESSRS. THOMAS WORTHINGTON & SONS, Architects.

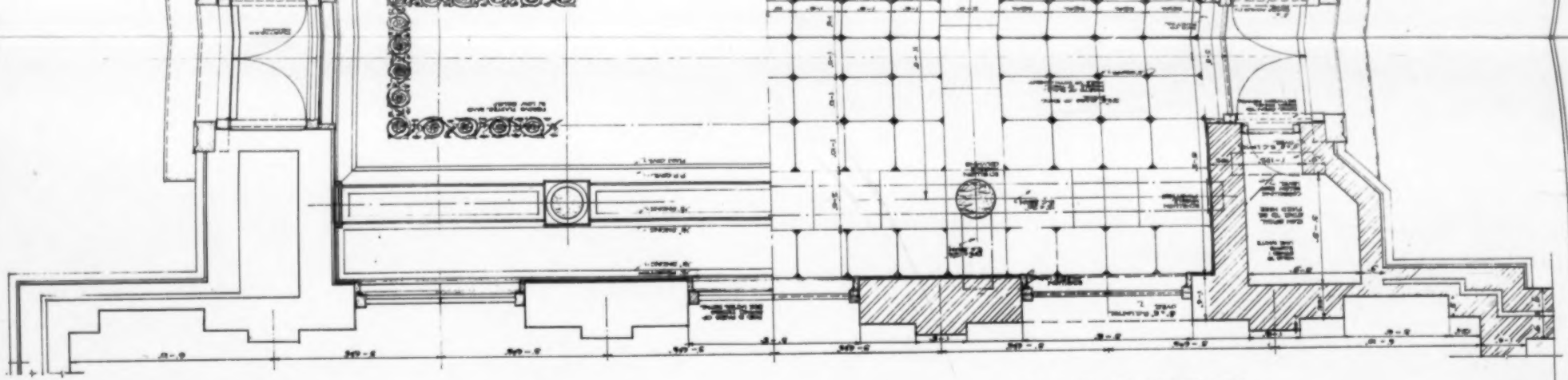




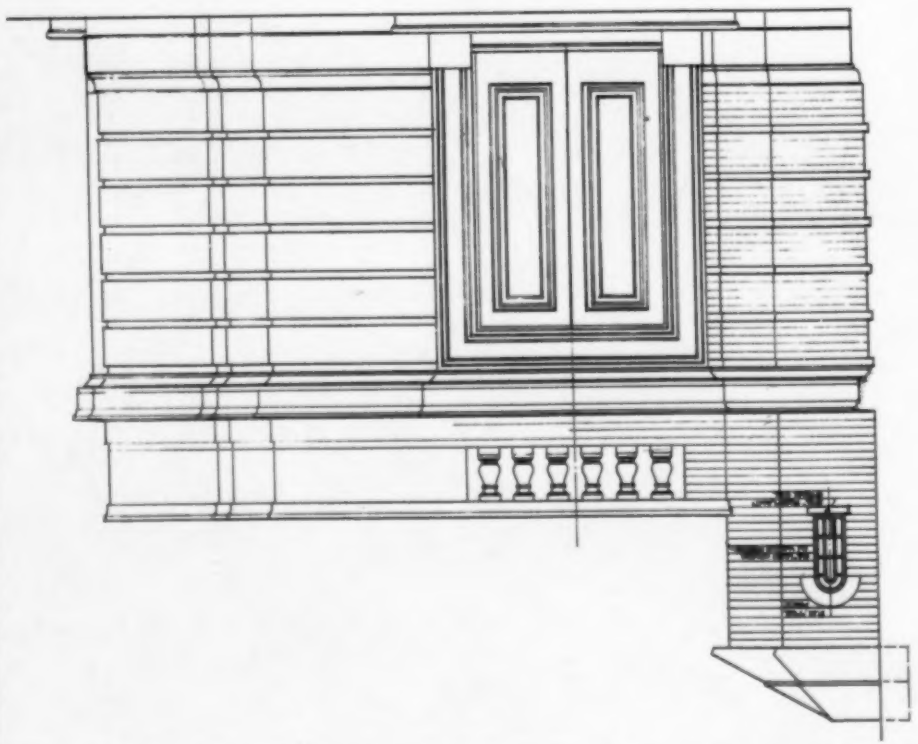
ROSSALL SCHOOL DINING HALL: THE SOUTH FRONT.

Messrs. Thomas Worthington & Sons, Architects.

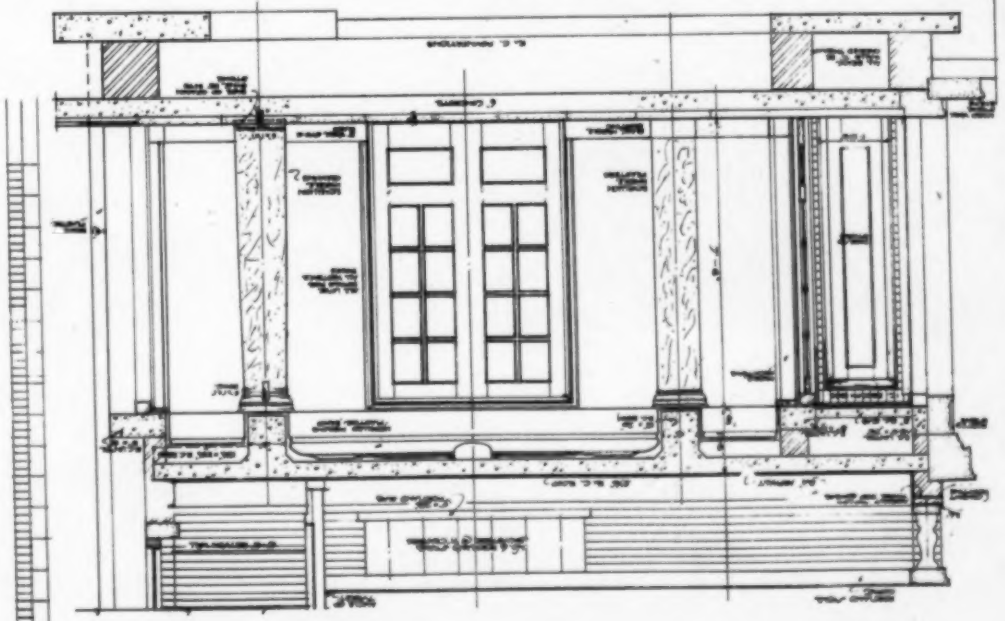
THE BUILDER, SEPTEMBER 1, 1900

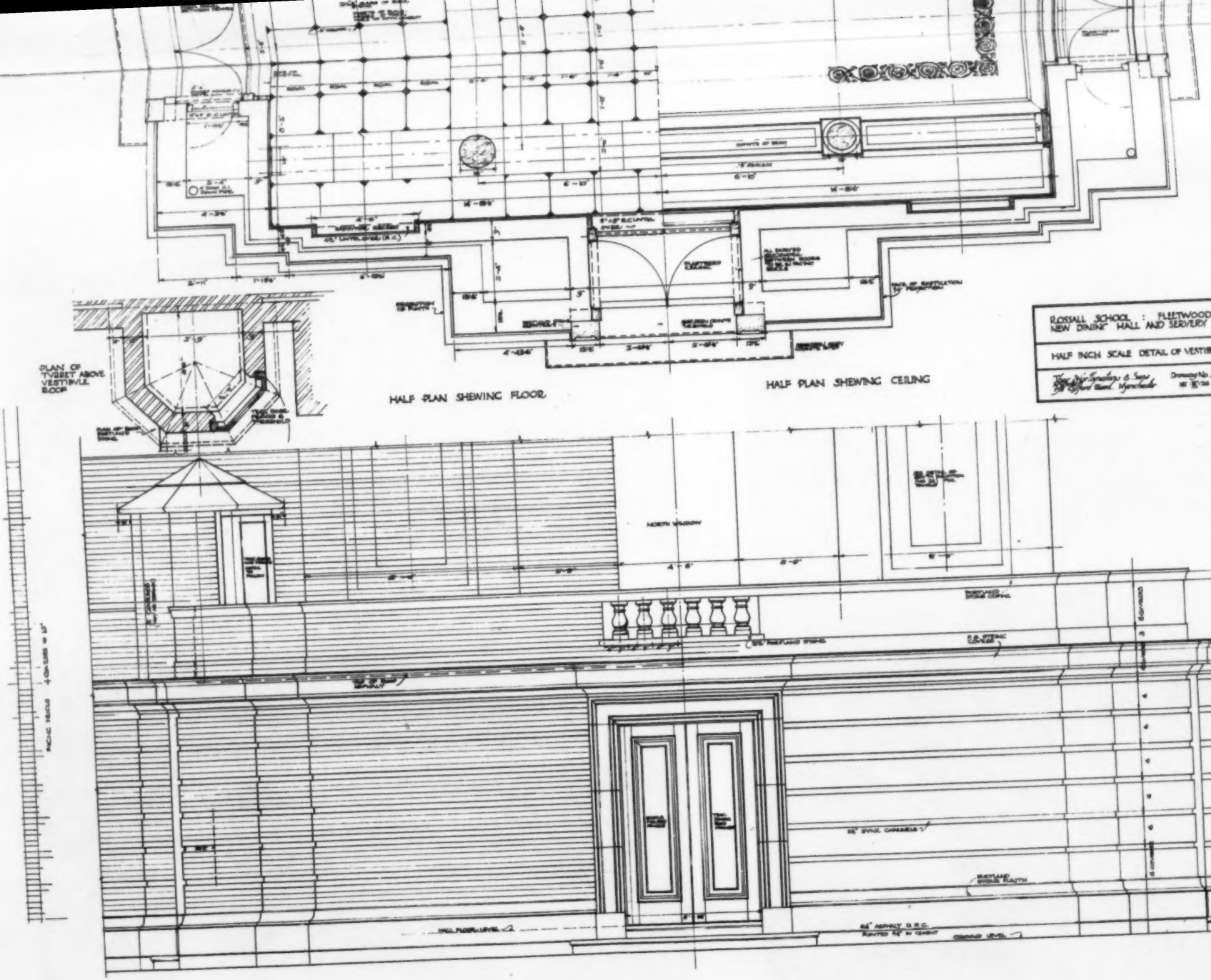


WEST ELEVATION



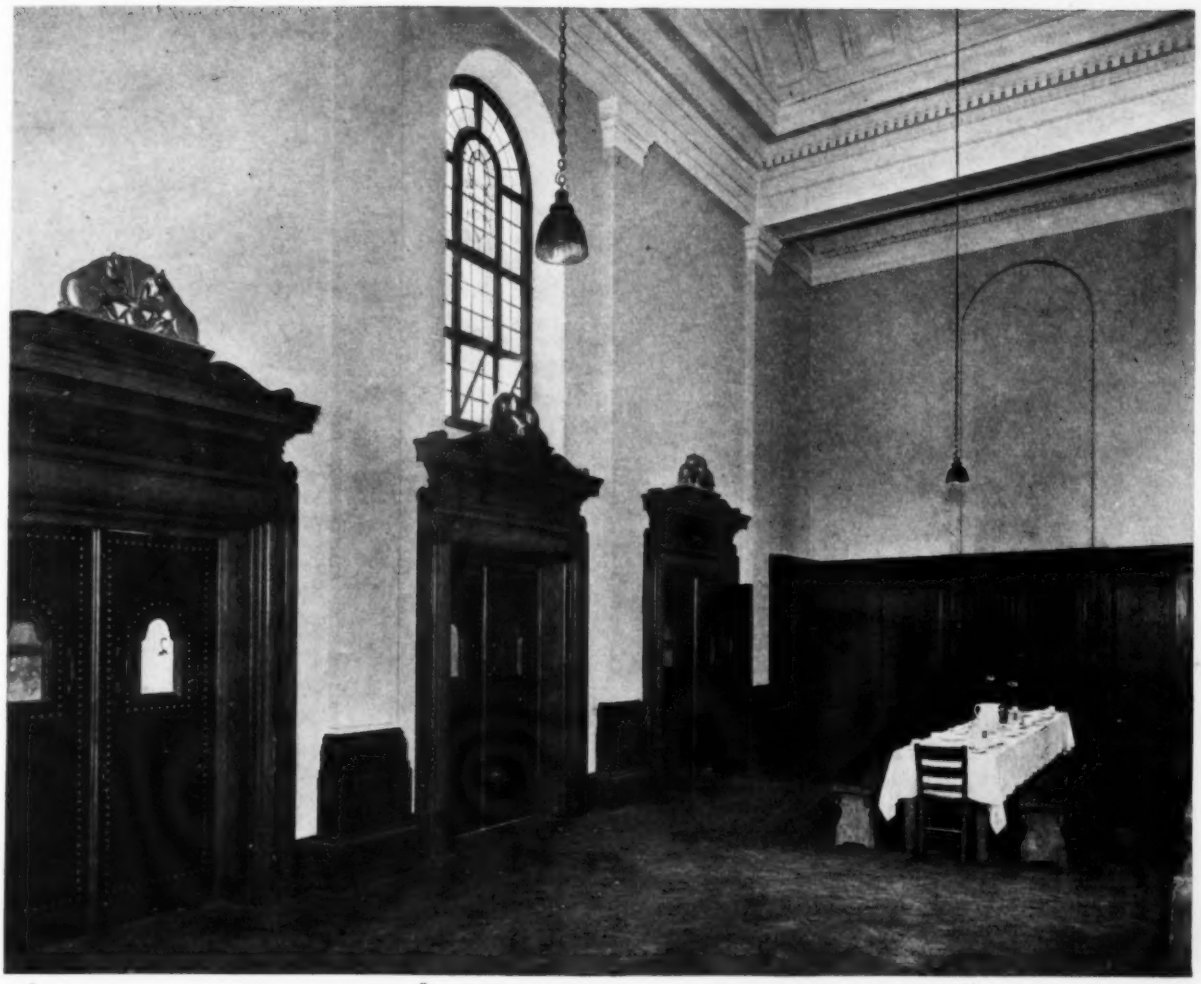
CROSS SECTION ON CENTRE LINE



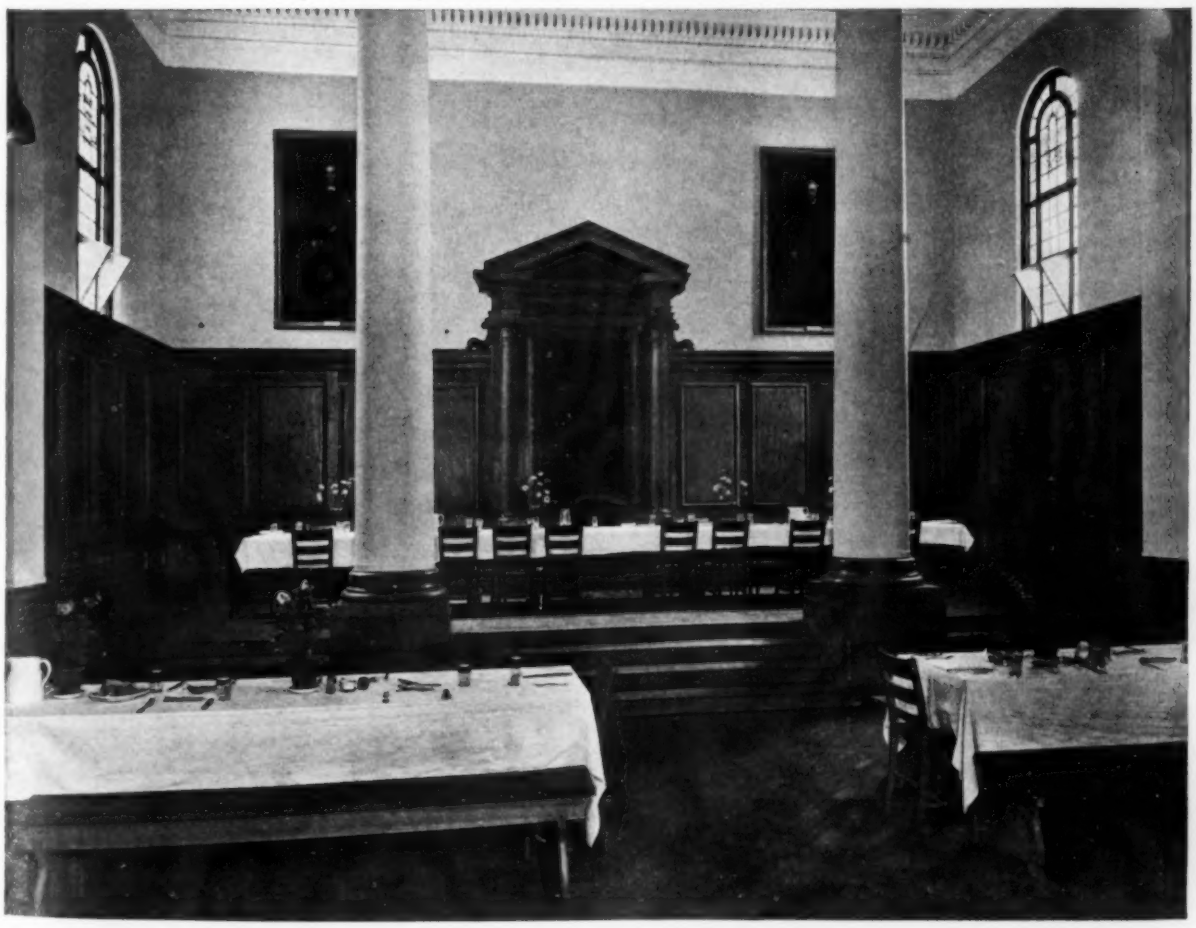

ROSSALL SCHOOL : FLEETWOOD
NEW DINING HALL AND SERVERY
HALF INCH SCALE DETAIL OF VESTIBULE
Thos. Worthington & Sons
Drawing No 27
PLAN OF TYGRET ABOVE VESTIBULE ROOF
HALF PLAN SHEWING FLOOR
HALF PLAN SHEWING CEILING
NORTH ELEVATION

ROSSALL SCHOOL DINING HALL.

Messrs. Thomas Worthington & Sons, Architects.



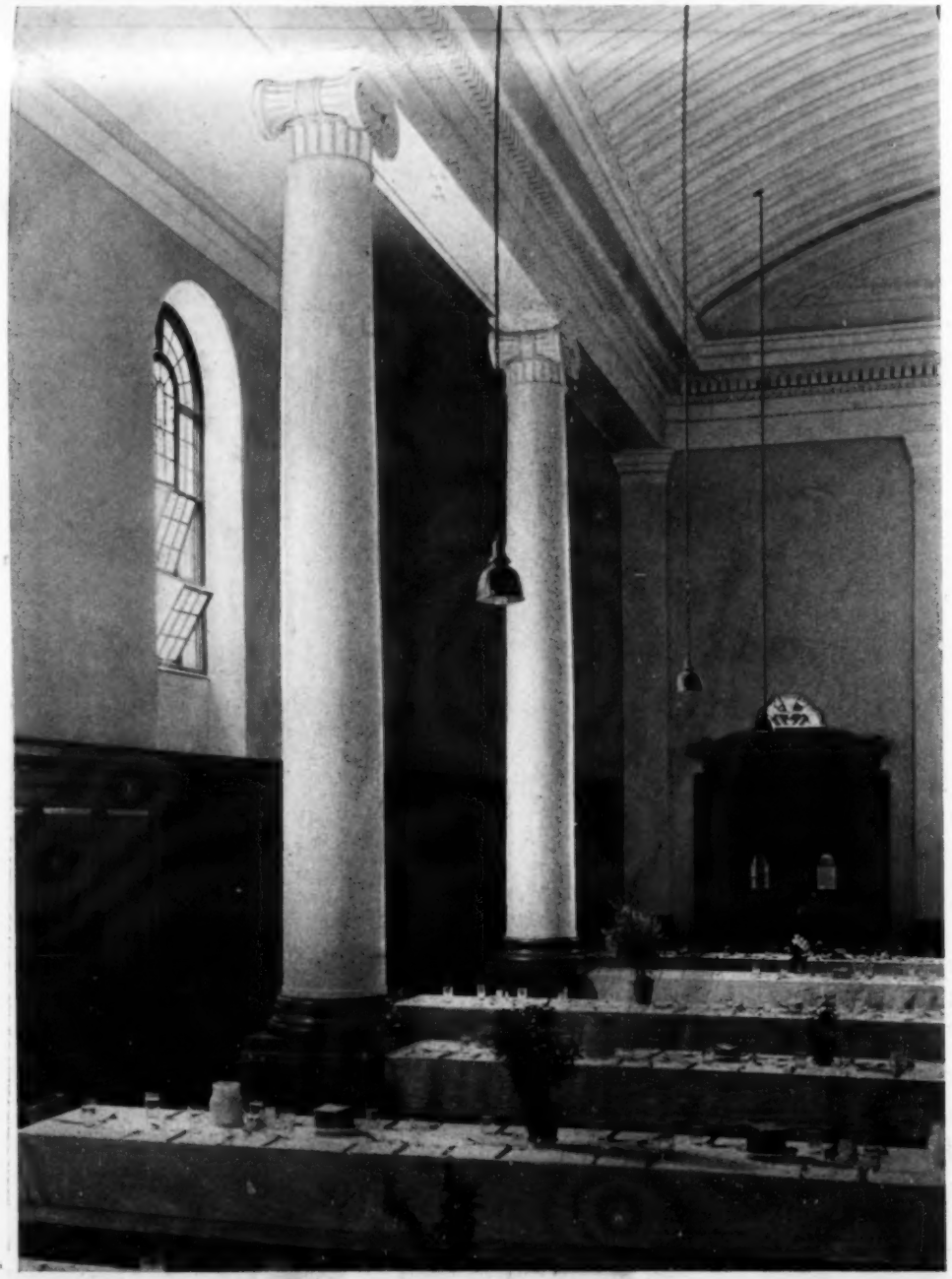
INTERIOR, SHOWING THREE ENTRANCE DOORS.



DETAIL OF HIGH TABLE RECESS.

Rossall School Dining Hall.

MESSRS. THOMAS WORTHINGTON & SONS, Architects.

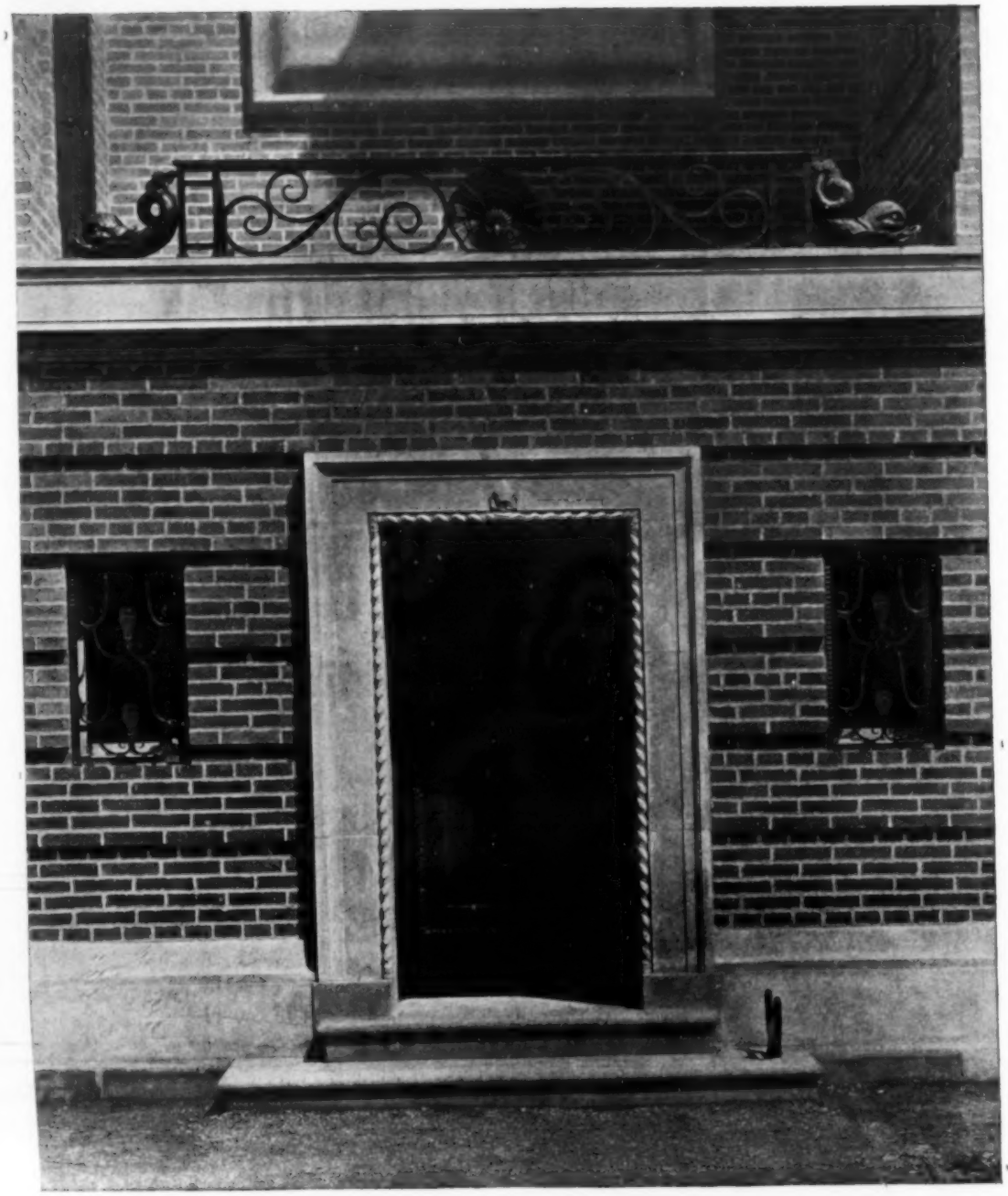


INTERIOR, LOOKING TOWARDS ONE OF BOYS' ENTRANCES.

DETAIL OF ONE OF BOYS' ENTRANCE DOORS.

Rossall School Dining Hall.

MESSRS. THOMAS WORTHINGTON & SONS, Architects.

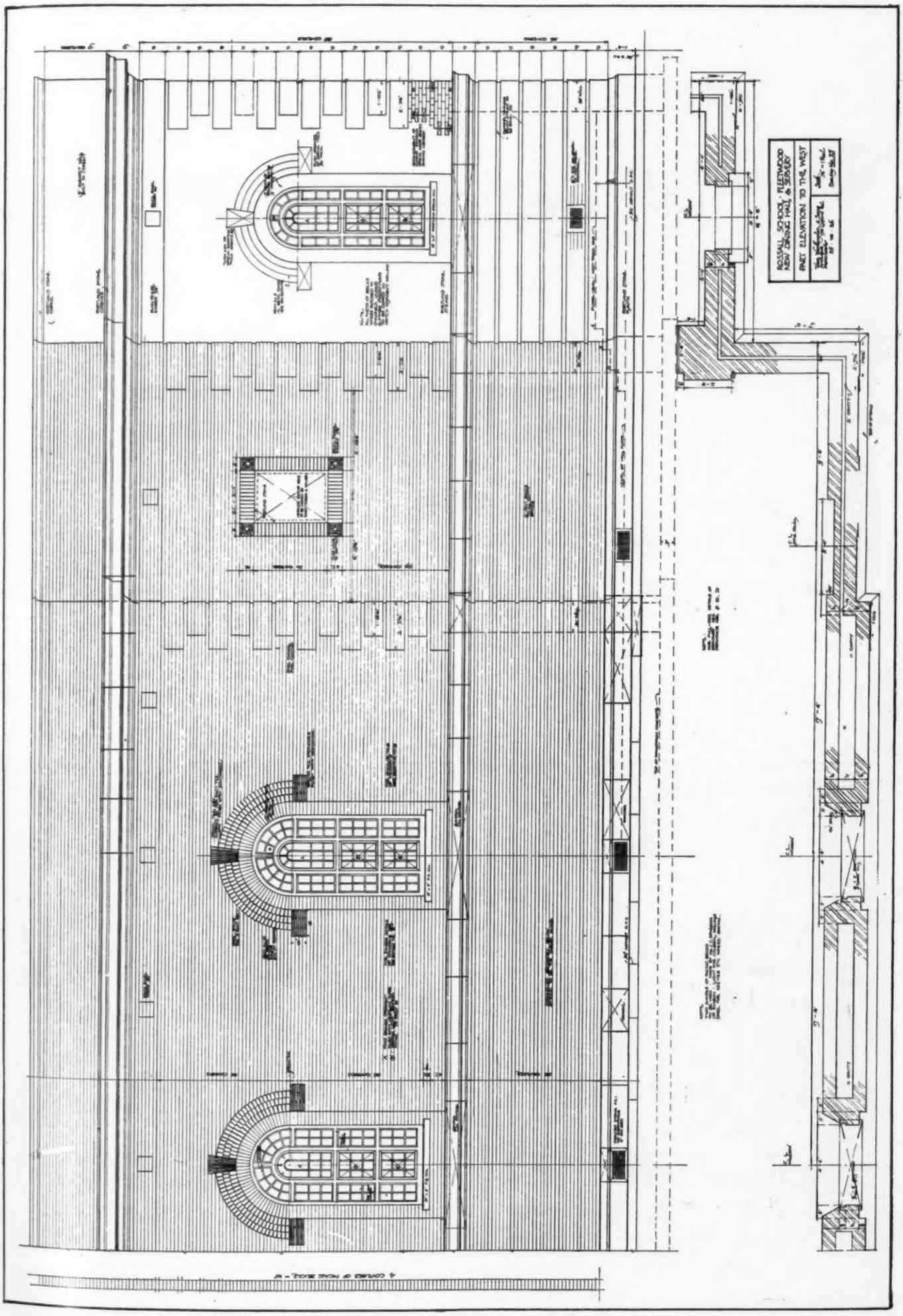


DETAIL OF HEADMASTER'S PRIVATE ENTRANCE.

CARDINAL ALLEN'S COAT OF ARMS, CARVED IN PORTLAND STONE.

Rossall School Dining Hall.

MESSRS. THOMAS WORTHINGTON & SONS, **Architects.**



Rossall School Dining Hall.

MESSRS. THOMAS WORTHINGTON & SONS, Architects.

Deulacres.

Cardinal Allen.

Rose.

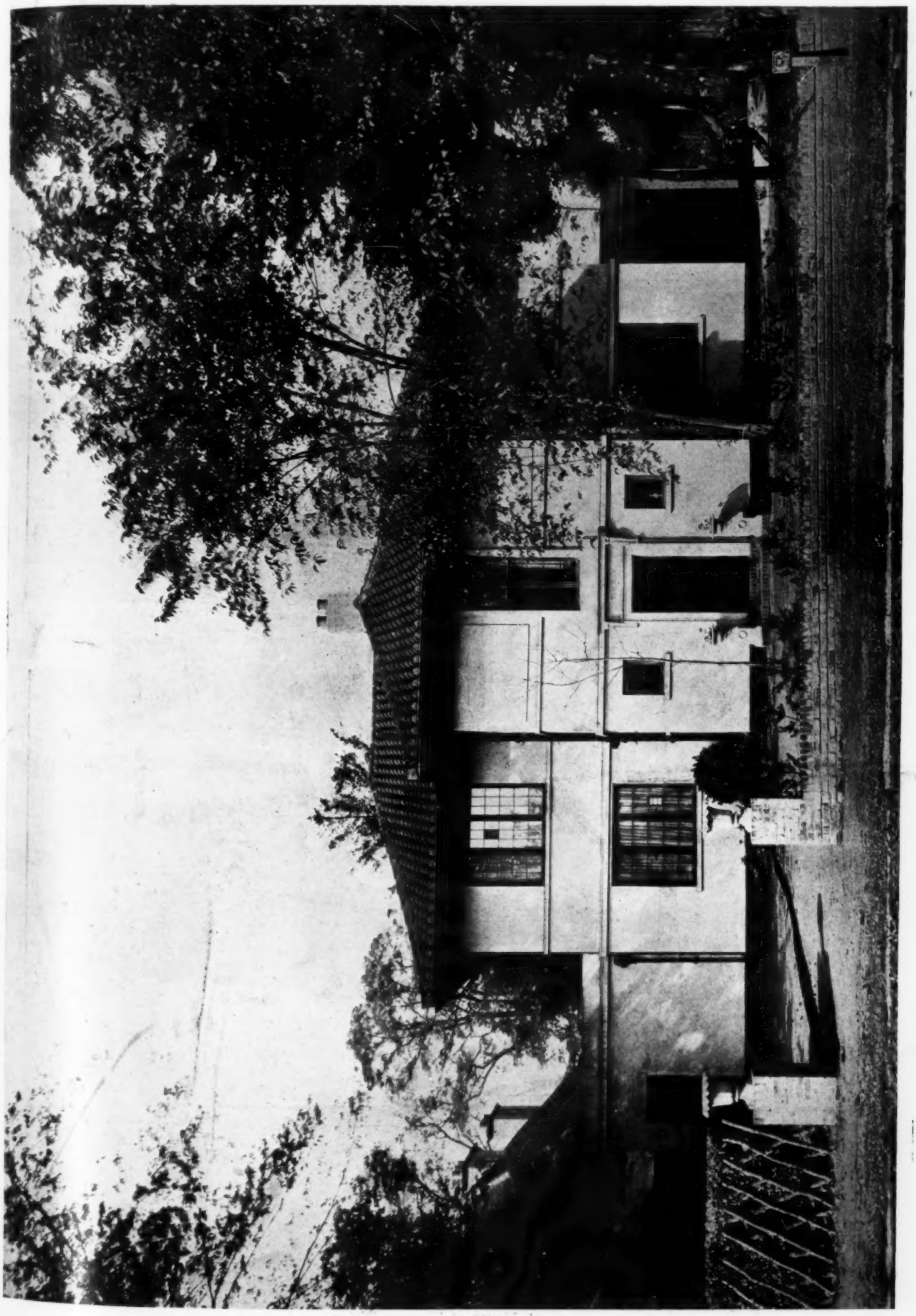
Pelican.

Mitre.

Dragon.

Stained-Glass Windows in Rossall School Dining Hall.—By Mr. Francis H. Spear, A.R.C.A.

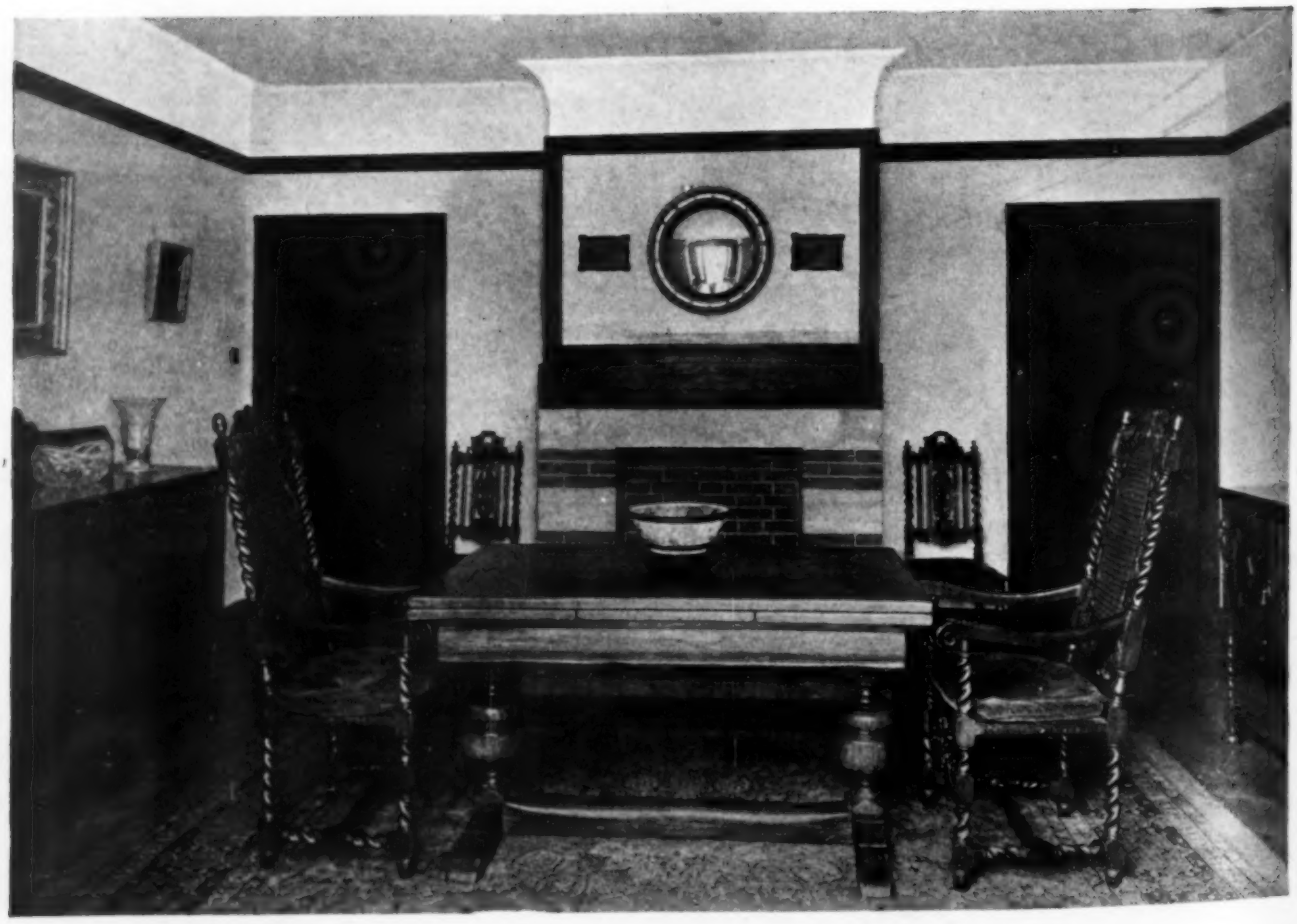
Messrs. Thomas Worthington & Sons, Architects.



A House at Thames Ditton: Entrance Front.

MESSRS. YATES, COOK & DARBYSHIRE, Architects.

LOUNGE.



DINING ROOM.

A House at Thames Ditton.

MESSRS. YATES, COOK & DARBYSHIRE, Architects.

LEGAL SECTION

NOTES ON CURRENT CASES

In our issue for May 27 and December 30, 1927, we considered the two important decisions delivered by the House of Lords on what was section 14 of the Workmen's Compensation Act, 1923, but which is now represented by section 12 in the consolidating Statute, 1925. Those cases were Ocean Coal Company *v.* Davies (1927, A.C. 271), and Niddrie and Benhar Coal Co. *v.* Dee (1927, A.C. 299).

The section in question has caused extraordinary difficulty in interpretation and some difference of opinion, even in the House of Lords, and it will be remembered that it provides that an employer shall not be entitled, otherwise than in pursuance of an agreement or arbitration, to end or diminish a weekly payment except in certain cases. Thus agreement and arbitration stand out by themselves, and the exceptions follow in three paragraphs. In the first two it will be observed that there is no direct mention of incapacity having ceased, but it is inferred. The first paragraph is "Where a workman in receipt of a weekly payment in respect of total incapacity has actually returned to work," and the second is, "Where the weekly earnings of a workman in receipt of a weekly payment in respect of partial incapacity have actually been increased."

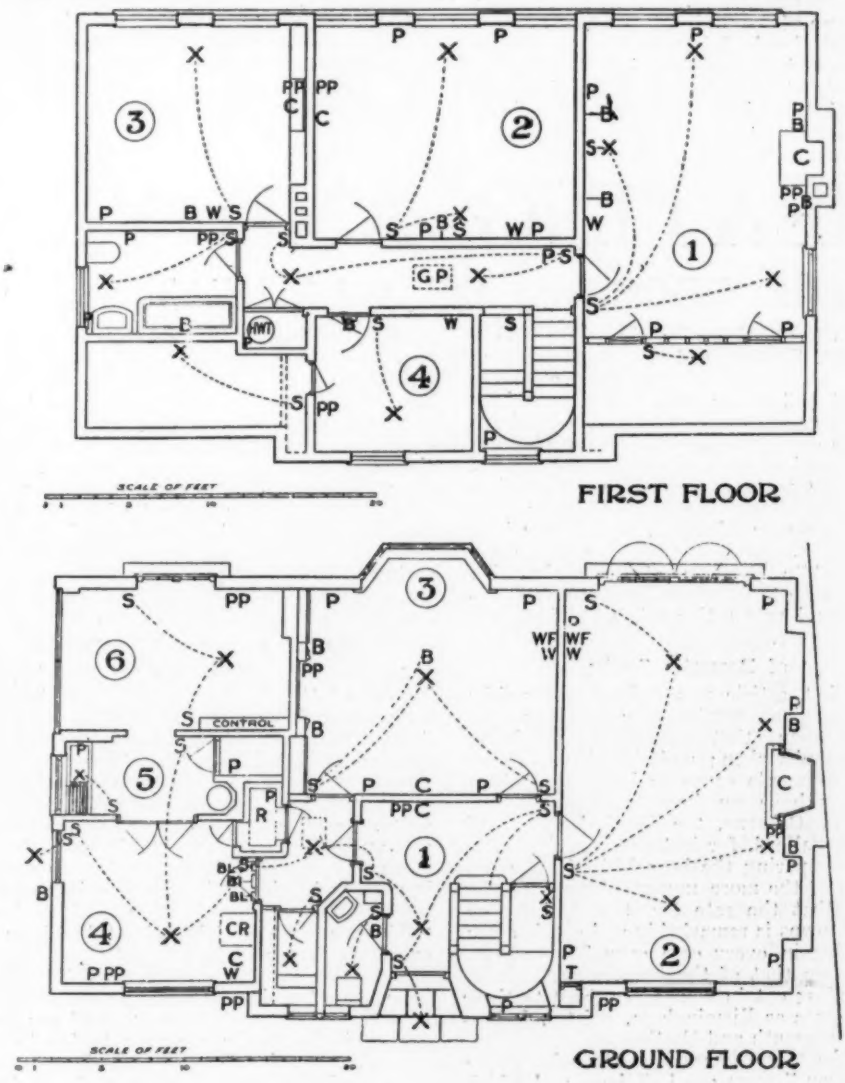
The third paragraph sets up machinery whereby the condition of the workman can be ascertained by medical examination by a medical practitioner of the employer the result of which, together with notice of the employer's intention to stop the weekly payments, shall be sent to the workman; the workman can challenge this medical report by a counter medical certificate, and unless this latter is questioned it will prevail, but it can be questioned by a reference to a medical referee with final reference to the court, and this paragraph contains an express provision that when the proceedings have reached the stage of reference to the medical referee the sum in dispute can be paid into court.

In Ocean Coal Company *v.* Davies, the employers were making weekly payments in respect of a workman's incapacity under voluntary agreement, and there was no recorded memorandum. After a time the employers ceased the weekly payments on the ground that the man had completely recovered. The workman denied that this was the case, and then the employers commenced proceedings by way of review. Before the hearing of the arbitration an admission was received from the workman's solicitor that the man had recovered, but it was contended that he was entitled to compensation until an award had been made, and this view was accepted by the arbitrator at the review. The House of Lords (Lord Dunedin dissenting) held that after incapacity had ceased the arbitrator could have no jurisdiction to award any payments, and the case must be remitted with a direction that the award must be that all payments cease as from the date of the recovery. In that case there was a further admission before the arbitrator that incapacity had ceased at the date the payments were stopped, so no question arose as to any sums due to the workman nor consequently as to any payment into court. The decision comes to this: "No incapacity, no compensation."

In Niddrie and Benhar Coal Company the facts are more complicated, but shortly stated, are as follows: The employers had been paying an injured workman weekly payments under an award since 1913, but on September 8, 1925, they *de facto* had stopped the payments, taking at the same time the first step under the third paragraph of section 12, and serving the notice and medical certificate on the workman. The workman served a counter certificate, and the procedure was followed up to the application to have the matter referred to the medical referee. This application was refused on the ground that the case was of exceptional difficulty and ought to be settled by arbitration, a power given by section 19 subs (2). The proceedings under paragraph three being thus hung up, the employers at once applied for a review. It was a Scottish case, and the workman, before the review could be heard, took proceedings which are the equivalent of levying execution for all the arrears payable since the payments had been stopped. The employers applied for a stay of execution, and the court, as a condition of hearing the application, required the sum in dispute to be paid into court. The application was then heard and appealed right up to the First Division of the Scottish Court of Session, and all the courts dismissed the claim of the employers, which means that but for the appeal to the House of Lords execution would have issued for all the arrears of the weekly payments from the date they were stopped. The House of Lords reversed the decision of the First Division, the main ground being that the decision offended against the principle laid down in the previous case that the right of payment depends upon the continuance of incapacity, but a subsidiary point was decided in regard to the payment made into court, and it was held that the payment made into court in the application to stay execution would await the result of the arbitration on the review. In this case Lord Dunedin held that the payment into court had not been made under the third paragraph at all, but in the opinions delivered by Lord Shaw of Dunfermline and Lord Wrenbury there are expressions which seem to imply that the payment into court was treated as though made under that paragraph.

The reason we refer to the above cases in some detail is that the matter has again come before the Court of Appeal in a case reported in the Law Reports for July, Catton *v.* Ashwell *v.* Nesbit (128, 1 Ch. 484) in another form. There a workman had suffered injury by accident on August 1, 1925, and the employers had voluntarily made weekly payments until July 16, 1927, when they were stopped. Before that date the employers had notified the workman that they intended to claim that his incapacity had ceased on May 30, 1927, and that their obligation to make weekly payments had come to an end. On June 24 the employers applied for a review, and on July 16 they paid into court, with a denial of liability, the sums which represented the weekly payments from May 30, 1927, up to the date fixed for the hearing of the review, October 14, 1927.

The workman moved in the County Court for an injunction to restrain the employers from discontinuing the weekly payments and on this application being refused, commenced this action in the Chancery Division, seeking a declaration that the employers had com-



Plans of All-Electric House, Birmingham.

MR. WILLIAM T. BENSLYN, A.R.I.B.A., Architect. (*See pages* 506, 519 *and* 525.)

mitted a breach of their statutory duty under the section by discontinuing the payments otherwise than by agreement or arbitration without having brought the case under any of the excepted cases mentioned in the section. It was attempted to distinguish the case from Ocean Coal Co. *v.* Davies, on the ground that there then had been an admission by the workman that incapacity had ceased whilst here that question was in issue, and reliance was placed upon certain expressions used by Lord Wrenbury and Lord Carson in the Ocean Case. The former said: "It may be nothing more than an enactment that until the question whether his liability to pay is a continuing liability or not is decided he (the employer) shall go on paying, *de facto*, and that if it shall be decided that he was not under a continuing liability he shall be left entitled to recover." It was pointed out in the Court of Appeal in Catton's case that if there was a statutory obligation for the employer to make payments, and they were made under compulsion of process of law they could not be recovered by action, and it appears if that were so the employer would be placed under a liability to pay irrespective of the question of incapacity being decided, a position contrary to the finding in both cases in the House of Lords that liability to pay must depend upon incapacity continuing.

Both the Court below and the Court of Appeal held that the action failed, as the employer had committed no breach of duty in the course he had taken in stopping the payments and applying for a review and bringing the money into court pending a decision as to the question of incapacity. Without pursuing legal technicalities we will try to indicate what is the effect of Catton's case read in conjunction with the two cases in the House of Lords, but it must be remembered that Lord Atkinson in the Ocean Case expressed the opinion that if obscurity was the object sought after in framing this section that object had certainly been attained, so nothing is free from doubt. Where the employer stops a weekly payment the right course appears to be for him either to resort to the special procedure laid down in the third paragraph of section 12, in which case, to a certain extent, payment into court is provided for (but we shall refer to this below), or, as appears from the observations in Catton v. Ashwell, he can stop the weekly payments, but should immediately apply for a review, and as soon as possible pay into court the sum representing the weekly payments from the date the payments were stopped up to the date fixed for hearing, with a denial of liability. The payment into court in this case was made apparently under Rule 19 (2) and (9) of the Workmen's Compensation Rules, 1926, and Lord Justice Sargent, expressed the opinion that it did not require an application to Court under Rule 59. There does not, however, appear any objection to the employer applying under that rule, and it appears to us that in order to make sure that the payment into court will cover the period during which incapacity may be found to have existed, the safer course would be for the employer to apply to the court under Rule 59 (4), and obtain an order of the court. That rule is as follows: "Where a request is filed for arbitration with respect to the review of a weekly payment, the judge may at any time before the hearing of the arbitration order the weekly payment to be wholly or partially paid into court to abide the order of the court, as from the date on which the employer alleges in his request that incapacity wholly or partially ceased or from any later date until the hearing of the arbitration."

That is the position from the employer's point of view, but as it was alleged that the decisions in the House of Lords rendered the section nugatory from the workman's point of view, let us see what course is open to him. The mere filing of an application for review does not entitle the employers to suspend weekly payments; some further step must be taken—(see per Lord Justice Lawrence in Catton's Case)—and if no further step is taken, we find it suggested by Mr. Justice Clauson that the workman, if the payments were being made under an unrecorded memorandum, should take steps to have it recorded and then apply under Rule 82 for leave to issue execution. The registrar under that rule would have power either to order execution to issue or to suspend execution on such terms as he thought proper, if he was not satisfied that incapacity still existed. Another alternative open to the workman was pointed out by Lord Justice Lawrence, which was an application under Rule 59 to have the money paid into court. It will be seen that either party can take action, so that an arbitration must follow, and the weekly payments cannot finally be stopped except "in pursuance of an arbitration," and we think it is also clear from the combined judgments delivered in Catton's Case that no action independent of the Act can be taken, at any rate, until under section 21 the question of incapacity has been settled by the tribunal set up by the Act, viz., arbitration.

One word remains to be said where recourse is had to the procedure indicated in the third paragraph to section 12 and the provisos thereto. Lord Wrenbury, in Niddrie *v.* Benhar Coal Co., pointed out that the proceedings under that paragraph might result in either one of two things, namely, a medical reference or an arbitration, and as regards payment into Court, the section had worked out the former, but not the latter, and the Act was obviously ill-drawn, but the House in that case, as we have said above, held that the money paid into court would be dealt in accordance with the result of the review. It will be seen that the new legislation in 1923 has created a most complicated condition of affairs, and all we have been able to do is to attempt to indicate the effect of these three decisions.

HEATING AND VENTILATION

THE PROGRESS OF GAS HEATING

DURING the period of a single life-time a 90 per cent. lighting load of the gas industry has been transmuted to practically a 90 per cent. heat and power load, and concurrently the output of gas during that period has been more than quadrupled, while its extended use in new directions ensures continued progress. But we are more concerned in this article with the progress of the past year than with the progress of a life-time, and if we look back exactly a year at an article which appeared in *The Builder* of September 30, 1927, we first of all find evidence of new determination and new action taken to abate the smoke nuisance.

The Problem of Domestic Smoke.

Since that article was written the public have been given ample cause to know that movements in that direction are being seriously undertaken; and they have further been given ample cause to know that these movements have an importance which is vital. Dr. Osborne, the Medical Officer of Health of Salford, for instance, has shown, in a table comparing the bronchitis death rates for some of the more important areas in the country, that the rate for the Manchester group of towns is remarkably and consistently high, being in every case over 50 per cent. greater than that of the country as a whole, and standing out in marked contrast to those of such areas as Birmingham, Bristol, Leicester, Bournemouth and Eastbourne.

It is the tarry domestic smoke which puts the "bloom" upon our buildings, and which is so distressing to our architects and so injurious to our respiratory organs. The great group of towns and urban districts, of which Manchester forms the centre, constitute a very densely populated area, containing several millions of inhabitants, largely working class, whose hundreds of thousands of dwellings are mostly provided with ordinary open fires and kitchen ranges consuming a vast amount of soft bituminous coal. But some municipalities are more enterprising than others in their method of tackling the smoke problem, and Manchester is one of them. That city's housing authority has experimented with grates designed for the consumption of smokeless fuel, and since 1922 has installed gas fires in new dwellings.

Smoke Abatement and Ventilation.

Another Medical Officer of Health, Dr. Moore, of Huddersfield, lately dealt broadly with the problem of smoke abatement at the Annual Congress of the Royal Sanitary Institute, held at Plymouth. After discussing the opportunities afforded to local authorities in dealing, by education, with the open fire grate, he gave it as his opinion that there was an even greater opportunity of reducing the smoke evil where new estates are springing up, and it is possible to introduce smokeless appliances for heating and cooking. "The gas industry," he said, "has been an enormous factor in reducing the smoke evil of great cities. Reputable British makers have caused prolonged scientific researches to be made into the whole question of gas heating, and the results are seen to-day in serviceable, scientifically constructed equipment that can be safely used without the slightest detrimental effects to health. The good modern gas fire heats adequately and assists in healthful ventilation, and for these reasons it must be given an important place in the heating arrangements of new housing schemes."

Dr. Moore, however, went on to point out that an undesirable practice has crept in of omitting flues from the apartments of certain types of dwelling. "In this country," he says, "an air channel of adequate dimensions from near the floor to the roof top is the normal means of ventilation in the rooms of houses, and whatever the system of heating provided, one should be allowed for in every apartment designed for human occupation. The grid or air brick is not sufficient to ensure properly hygienic conditions where free ventilation does not exist."* There is the more reason to quote this authority since last year, in these pages, some details and recommendations were given regarding the construction of gas fire flues, including the minimum permissible flue areas for each size of gas fire, and the approximate floor areas of the apartments for which they would be suitable.

What Local Authorities are Doing.

To return to the progress which has been made in the equipment of new houses, the northern counties are showing a remarkable example to the rest of the country by their enterprise in dealing with the domestic smoke problem. Many local authorities are taking active steps to give effect to the spirit of the National Smoke Abatement Conference's recommendation that greater use should be made of existing powers in tackling the domestic smoke nuisance. In regard to old houses equipped with open fire grates and

* Since published in a booklet entitled *Gas Fire Flues*, obtainable from the British Commercial Gas Association.

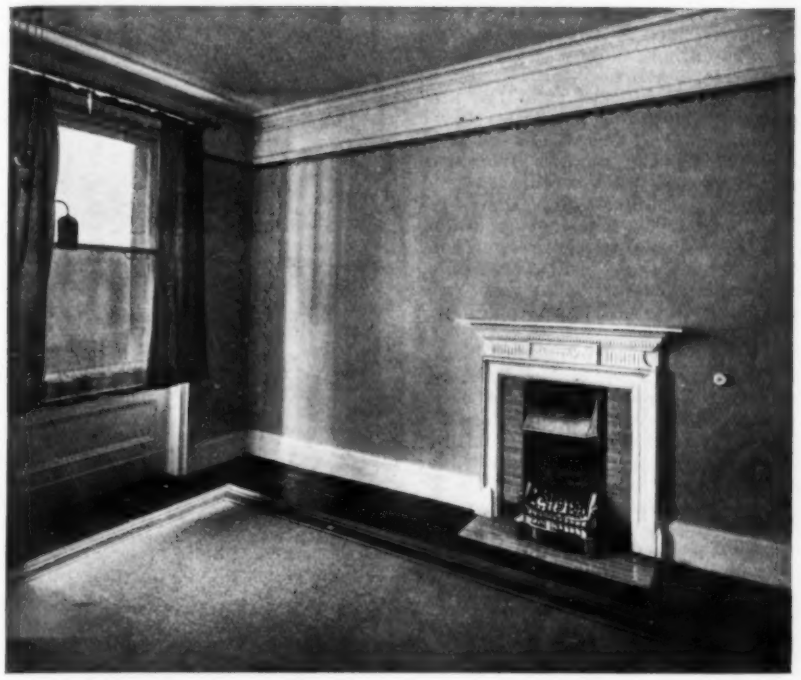


FIG. 1.—ROOM IN FLAT, WESTERN MANSIONS, SHOWING GAS FIRE RESEMBLING GLOWING COKE FIRE.

coal ranges, borough and urban councils throughout the West Riding, in the South of Yorkshire, and in the populous district around Manchester, are urging the public to substitute smokeless fuels—solid or gaseous—for raw coal. In new housing estates provision has been made either for the encouragement of the burning of solid smokeless fuel, as in the case of Hull, or for the installation on a scale hitherto unattempted of gas fires, cookers and water-heaters, or electrical appliances in districts where the price of electricity makes it an economic alternative.

House-heating Policy in the North.

The West Riding of Yorkshire Regional Smoke Abatement Committee has recently invited the hundred local authorities affiliated to it to forward information showing precisely what has been done in their areas. This information has now been assembled in the shape of a report. The following extracts typify the vigorous policy now being pursued in the West Riding:—

Leeds, 1926-27.—One thousand, two hundred and fifty-one houses erected by the Corporation are provided with gas fires in all rooms except the living room, where a coal fire is provided, together with a fire-back boiler. The scullery contains a gas cooker and gas copper. Twenty-four of these houses have also secondary means of heating the water required for the bath and lavatory by gas, in addition to the fire-back boiler.

Bradford.—Five thousand houses have been erected, all of which are heated by gas, with the exception that in each house there is one coal fire in the living room.

Halifax.—Seventy-five per cent. of houses erected by the Corporation are provided with gas cookers. Eighty per cent. of the houses are provided with gas fires in the bedrooms. In 25 per cent. of the houses combination stoves have been fitted which will burn either coal or coke.

In Batley, 36 houses have been erected by the Corporation, and fitted with coke fire boilers for hot water, etc., gas cookers for cooking purposes, and gas fires in the bedrooms.

In Skipton gas cookers have been installed, and also gas fires for heating bedrooms in new Council houses.

Development in the South.

It must not be assumed that the south are behindhand in this development. Last year in these columns mention was made of 200 houses then in course of erection at Egham. None of these houses, which have since been completed, is by any means a rich man's home, yet in every bedroom there is a gas fire, and gas fires have even been fixed in some of the parlours. In each bungalow there is not more than one solid fuel fire. Other equipment includes gas lighting fittings, a gas cooker and a gas copper. The building operations lasted about a year. At the end of that time every one of these homes was sold.

At St. Helier, on the London County Council's estate at Morden, approximately 8,000 dwellings, housing 40,000 people, are to be erected during the next few years. The new houses will be of the same kind as those built at Becontree, where the majority of the houses of various types and sizes are carcassed for lighting by gas, and points are provided for a gas cooker in the kitchenette or scullery of each house, and for a gas fire in one of the bedrooms.

Modernising Pre-War Property.

'We may take it for granted, then, that work is going forward fast on the lines described above. There is still more significance in the methods being adopted by progressive property owners in the remodelling and re-equipment of high-class dwellings. Messrs. Western Mansions, Ltd., are the owners of some blocks of buildings in London, known as Buckingham Palace Mansions, Gordon Mansions and Ridgmount Gardens. These together contain over 220 high-class residential suites, most of which were built about thirty years ago. The buildings when originally erected represented the last word in comfort, judged by pre-war standards. During the past few years, however, the progressive management of the property have not been slow in deciding upon a policy of remodelling and re-equipping their suites as leases expire or when existing tenants express their willingness to allow improvements to be incorporated.

The carrying out of this policy involved the running of gas supply pipes to every fireplace to facilitate the fixing of gas fires; the heating of public landings and staircases by hot water radiators; the provision of one hot water radiator inside the entrance to each flat, and a constant supply of hot water to each flat for baths and domestic purposes and for heating the radiator. This hot water service is provided from a central source and is paid for in the inclusive rentals charged for the flats. In addition, kitchens, larders and pantries have been tiled and modernised, and gas cookers and gas-operated refrigerators have in each case been provided. The initial cost of the refrigerator is borne by the management, and a set charge is included in the rental charge for the flat.

The Heating System.

All the buildings of Western Mansions, Ltd., are heated on the same lines. Large coke-fired boilers supply hot-water radiators placed on the public landings leading to the various self-contained flats, and to one radiator placed inside the entrance to each flat. These hot water radiators impart a warm "tone" to the air throughout the building without over-heating the air, and have entirely overcome the trouble of condensation (caused by sudden changes in the outside temperature) which was experienced before their installation. All rooms originally had coal fireplaces provided, but gas pipes have now been taken to every fireplace to facilitate the fixing of gas fires. In the vast majority of instances gas fires have now been fixed in, or in front of, the coal grates.

FIG. 2.—17-IN. GAS FIRE IN WOMEN'S SURGICAL WARD, BATTERSEA GENERAL HOSPITAL.

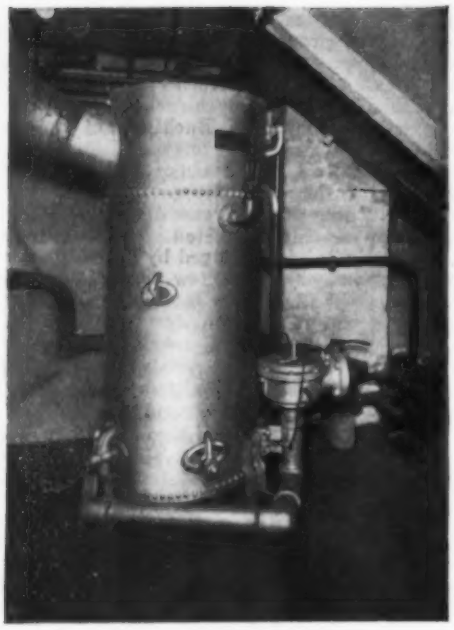


FIG. 3.—VERTICAL GAS BOILER SUPPLYING HOT-WATER TO RADIATORS, ARTS THEATRE CLUB.

A description of the radiator-heating system in the largest block of flats (Ridgmount Gardens, Gower Street, W.C.1), will give a general idea of the plan adopted. Two coke-fired boilers supply hot water throughout the building to all radiators, of which there are 32 on the public landings and one in each of the 102 flats. The radiators are in action from September to June, and the temperature of the water is varied in accordance with outside temperature conditions. The radiator in each flat can, of course, be turned on and off at will by the tenant. Thermometers are fitted on the coke boilers, so that the engineer may at any time see the temperature to which the water is being heated.

The gas fires in the flats vary, of course, in accordance with the design and size of the fireplaces in which they are fixed. Fig. 1 shows a type of gas fire which is popular. This is fixed in the original coal grate, and when alight closely resembles a glowing coke fire. All radiator heating is provided by the management, and the service is covered by the inclusive rental charged for the flat. Gas fires are purchased or hired by the tenants from the gas undertaking, and all gas consumed is paid for by the tenants. The dual system of heating by low-temperature radiators and by open radiant gas fires, is considered to be as near the ideal as possible. It is giving entire satisfaction to the estate management and the individual tenants.

A Hospital Installation.

One of the largest London hospitals, St. Thomas's, consumes over 30 million cubic feet of gas in a year. St. Bartholomew's and the Westminster follow with 13 million and 11 million respectively. Each of these hospitals uses gas extensively for heating, and "Barts" have placed an order for heating the whole of the wards within three years. As part of this contract has now been completed, it is estimated that this will mean an *additional* consumption of 13 million cubic feet a year. Once again, therefore, we find the hygienic value of gas fires, and their convenience, asserted by medical patronage, and it will not be out of place to examine the heating arrangements at another large hospital, the Battersea General, newly equipped for heating, cooking and water-heating. This hospital was originally heated by solid fuel—coal and anthracite. The main heating is now done by gas fires. In four large wards containing 28 beds each, nine smaller wards, public and private, containing from two to six beds, and one children's ward of six beds, gas fires are installed, one in each ward. At the moment there are 59 fires in all, others now being installed in the matron's suite, the sisters', nurses' and maids' rooms, the surgeons' and doctors' rooms and the dining rooms and general sitting rooms. In the nurses' and maids' rooms shilling prepayment meters are fixed, and the occupants are given an allowance of one shilling per week for gas. There are nineteen of these check meters.

Fig. 2 shows the fire used in the women's surgical ward, and is typical of those fitted

FIG. 5.—BASKET STORE AT ST. DUNSTAN'S SALES DEPOT, RAGLAN STREET, HEATED BY FOUR TEN-LOOP LOCALLY-HEATED GAS RADIATORS.

in each of the larger wards. The matron's sitting room and the nurses' dining room each have attractive fires in beaten copper "finish," with copper surround and hearth plate. The children's nursery also has a fire, and those in the smaller public and private wards have pedestal boiling rings fitted to them. The nursery staff sitting room is divided into two sections by wooden folding doors. The two fires which do the heating have been chosen with circular tops to correspond with the shape of the existing coal grates.

FIG. 4.—MAIN DINING ROOM AND MEMBERS' LOUNGE, ARTS THEATRE CLUB, HEATED BY FOUR RADIATORS.

Other fires can be found in the three ward kitchens (where gas cookers have also been installed). The hot water installation, consisting of six gas-fired boilers and the general kitchen equipment of the hospital, would need space for description. All the fuel needs of the hospital are now met by gas, but here we are concerned only with heating. It is worth mentioning that gas fires were chosen by the hospital authorities not only on account of their labour-saving qualities (the men who previously carted all the coal and anthracite to the various rooms and tended the fires have now been released for other work) but because of their valuable ventilating properties. The whole of the building and alterations were carried out under the personal supervision of the chairman of the hospital, Mr. S. C. Turner. The honorary architect to the hospital is Mr. Horace Farquarson, F.R.I.B.A., of 14, North Audley-street, and the builders who carried out the work are Messrs. T. Rowley and Sons, Bridge-road, Battersea.

New Standards of Theatre Warming.

From hospitals we can follow the development of gas heating as far afield as theatres. The Theatre and Music Halls Committee of the London County Council, in its desire to minimise the danger to health attributed by medical authorities to the inadequate heating of some theatres, music-halls and cinemas, has proposed a new regulation that "heating apparatus shall be provided for making the incoming air . . . capable of maintaining a minimum temperature of 55 degrees Fahr. in the unoccupied building when the outdoor temperature is 30 degrees Fahr." The present regulations require only that dressing rooms shall be warmed, but the new rule embraces all parts of the theatre used by the public, the performers and the staff. Newspaper reports, in which comment is made on the proposed regulation, say that "the announcement has caused some consternation among the owners and the lessees of small London and suburban theatres and cinemas where no adequate heating apparatus exists. They fear that, owing to the difficulty of adapting old premises with limited space to elaborate central heating systems, it may be difficult for them to comply with the order." It is interesting to see how the management of one modern theatre has approached the heating problem.

The Arts Theatre Club, 6 and 7, Great Newport-street, W.C.2, has within its premises a theatre with a perfectly equipped modern stage and an auditorium, with stalls, circle and boxes to accommodate about 350 people. It has two dining rooms and a buffet, a members' lounge and an entrance lounge, and excellent lavatory accommodation. The heating, cooking and hot water equipment throughout the building has been very carefully chosen and installed. The theatre is heated and ventilated on the most up-to-date lines by the Plenum system, which delivers air into the building through ducts in the side walls of the stalls and circle. The air is warmed during cold weather in its passage over a battery of hot water radiators, situated in the Plenum chamber above the theatre. The heating of the hot water for the radiators is carried out in the basement, where a vertical gas-fired boiler is installed. This boiler, which is shown in Fig. 3, has an hourly output of 592,200 B.Ths. Us., and is used to provide hot water not only for the radiators of the Plenum system but for a number of other hot water radiators fixed in the two dining-rooms, two lounges, entrance hall, buffet, general office, dressing rooms and cloakrooms of the club. The circulation of hot water through the radiators is accelerated by a small electrically-driven pump to be seen on the right of the illustration. The maximum consumption of the boiler is 1,500 cubic feet per hour (7½ therms), but the boiler is provided with a diaphragm thermostat which at times reduces the consumption to a minimum of approximately 200 cubic feet per hour. This thermostat is adjusted to ensure automatically an average temperature of 160 deg. Fahr. in the water passing through the radiators, and to cut down the gas consumption as soon as the temperature tends to rise above this figure. The gas consumed by the boiler is separately registered by a meter with a capacity of 1,800 cubic feet per hour provided with a special by-pass so that if at any time it broke down, a supply of gas could still be maintained to the boiler.

The Plenum system, which ensures pure air, perfect ventilation and a comfortable temperature in the theatre, is automatic in action. The only normal labour involved is the starting up of the plant, the lighting of the gas boiler, and the removal of the impurities extracted from the air. The attention required by the plant in keeping it in good running order is negligible. There is no stoking to be done and no fuel storage space is required. The system creates no dust in the building and extracts all dust from the air entering the theatre. It is particularly suited to a theatre of this kind which is not in continuous use, but is often required at short notice. Because gas is used for the provision of heat, the plant can be started up in a few moments and can be put out of action equally quickly.

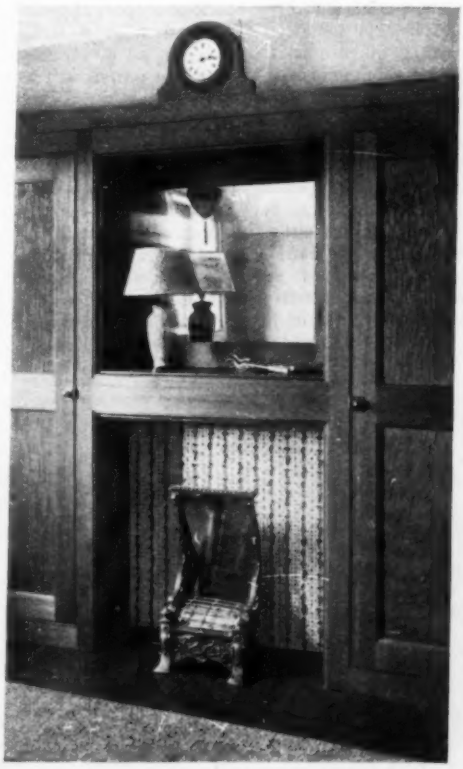
The main heating of the lounges, dining-rooms, buffet, entrance hall, general office and dressing-rooms, is by means of hot water radiators deriving their heat from the gas boiler shown in Fig. 3. The main dining-room and the members' lounge are illustrated in Fig. 4. It will be seen that three of the four radiators which heat the lounge are fixed in recesses between the windows. The architect of this theatre with its attached club-rooms was Mr. P. Morley Horder, F.R.I.B.A., and the builders were Messrs. F. G. Minter, of Putney. The whole equipment of the club, for cooking and water-heating, as well as heating, is gas operated. Gas cooking appliances meet demands for about 3,000 meals a week, and hot water is provided with maximum efficiency in kitchen quarters, lavatories and dressing-rooms.

Heating a Large Stores Depot.

With certain large buildings of the warehouse type where a constant even temperature is required throughout, it will often be found necessary to lay out capital in the installation of central heating apparatus. A great improvement has been made in recent years in the development of flueless gas heaters of the radiator pattern, which are easily installed and economical in use. The modern type of gas heater radiator is fitted with a burner controlled by a thermostat. This device automatically regulates the gas consumption to maintain the temperature at a predetermined degree.

One installation of these radiators can be briefly described. St. Dunstan's stores and sales depot, Raglan Street, occupy a building which at one time was a furniture depository. The first requirement when the building was taken over was quick installation of heating apparatus for a number of large airy rooms in which delicate goods were to be stored. These goods, to a large extent of wood and osier-work, had to be protected from danger of fire or humid atmosphere, and the natural decision was to use low temperature general heating. Thirty-four locally-heated gas radiators have been installed in various sizes from one to ten loops. The rooms to be heated comprised stores for baskets, joinery, netting and boots, and a number of offices. Fig. 5 shows one of four 10-loop radiators fitted in the basket store.

The stores management have caused gas geysers to be installed in the lavatories on each floor of the building. The installation can be added to the long list of those which bear witness to the increasing progress of the gas industry in coping with all kinds of circumstances and conditions, wherever heat is needed.



In an All Electric House, Birmingham.
MR. WILLIAM T. BENSLYN, A.R.I.B.A., Architect.
(*See pages* 505 *and* 506.)

BOOK REVIEWS

Warming Buildings by Hot Water. By FREDERICK DYE. (London: E. and F. Spon, Ltd., 57, Haymarket, S.W.1.) 10s. 6d. net.

There are so many reliable firms of heating engineers prepared, so to speak, to carry architects on their backs, that the latter as a class are apt to rely upon the former for the entire judgment required to produce a satisfactory heating scheme. The result is that there are not many professional men in the practice of architecture who have more than the very slightest knowledge of the principles of hot-water heating, and who would not be sadly in trouble if served by a firm who did not know their job. It is a pity that this is allowed to be the case, for it is not merely a case of being able to check the experts, but, what is far more important, being able to anticipate the needs of a heating system before the expert is called in. There are various matters, such as the size and level of the boiler house; the size and position of the heating fuel, as well as the best lay-out for the pipes, that should be well in mind at the earliest stages of the job, if expensive subterfuges are not to be a subsequent necessity. Absence of suitable literature has been the main cause of the deficiency; and it is indeed a good excuse for ignorance if it is necessary to study many works designed to serve those who are to make that one subject their life's study. But with a handy, thorough little text-book such as Mr. Frederick Dye's in existence, such an excuse falls quickly to the ground, and we commend it with confidence to all practising architects and students of the subject. Within its pages they will find an explanation of most of those mysteries which they have been so willing to leave to the skill of the heating engineer, hitherto, perhaps, with success, but some day, perhaps, with disaster.

Thermometric Conversion Chart, for the Use of Mathematicians, Chemists, Physicists, Schools, etc. By PERCY L. MARKS, L.R.I.B.A., Chartered Architect. London: Crosby Lockwood & Son. 3s. 6d. net.

This work consists of a few short notes concerning the authors of the several scales, and then a chart consisting of five scales arranged in three columns, and at the foot of each is the formulæ necessary for computing the temperature in any other scale, having given the temperature in one scale. Except as a rough check, we doubt if it will prove to be of much use to those enumerated in the title; for example, having given 150 deg. F., to convert that into the equivalent absolute scale would be very difficult to read with any degree of accuracy.

SUPPLY OF HOT WATER IN HOTELS AND SIMILAR BUILDINGS

BY A HEATING ENGINEER.

SOME entirely new features have been introduced for the purpose of controlling the hot and cold water services in the recently built Residence Palace, Brussels. The control of the hot-water supply circuits in large buildings such as hotels and flats, where a considerable quantity of hot water is used, is a difficult problem for the consulting engineer when he has to design an installation through which hard water will be circulated. Such waters throw down a lime deposit which is injurious to the interior of the stop valves. Numerous instances could be given of stop valves having been rendered useless for the purpose they were intended to serve because of the lime incrustation on the seatings and working parts.

The writer has in mind one of the best-known and most important hotels in London. In this building the drop circulations which supply hot water to the various bathrooms, etc., are a source of considerable trouble to the hotel management and the cause of much inconvenience to visitors staying in the hotel. Each bath, lavatory basin, and sink is controlled by a separate local stop valve, but as the apartments can only be entered (by the workmen) when repairs are necessary, the stop valves are used only on those occasions. The hot water makes a considerable lime deposit, with the result that after a number of years the local stop valves are of little use for the purpose of shutting down the hot-water supply to the various fittings.

The larger drop circulations are of 3 in. diameter, the smaller ones being 2 in.; each is controlled by two full-way stop valves, one being situated on the upper floor, the other at a point below the lowest draw-off branch. Whenever the local stop valves have to be repaired, or replaced by new ones, the work must be carried out during the less busy hours, which are from 2.30 to 4.30 p.m.; it is then necessary to inform all the occupants of the suites of rooms that are served by that particular circulation that the supply of hot water will be cut off during the hours mentioned. The occupants are subjected to the inconvenience and annoyance due to shortage of water, and to the noise made by the men working upon the valves and pipes —the pipes conveying the noise to each apartment into which they are connected. But the main stop valves are used even less frequently than are the local ones; consequently, in the course of time, the main valves become so corroded with incrustation that it becomes impossible to close them completely. If the valves could be opened and closed twice a week they would remain in much better order; but during the daytime workmen must not be seen in the corridors of a first-class hotel; and during the night even the slight noise associated with the opening and closing of valves cannot be permitted near bedrooms.

It has remained for an English engineer to devise a system whereby all the drawbacks already mentioned would be obviated; this system, which is really the control of water services from a central point, is now in operation in the central control room situated in the basement of the new Residence Palace.

Fig. 1 is an illustration of the central control room; it is well arranged, and from it are controlled all the hot- and cold-water services which extend to the various parts of the three huge blocks of buildings in which are 850 suites of apartments (many of which have twenty rooms), kitchens, serving rooms,

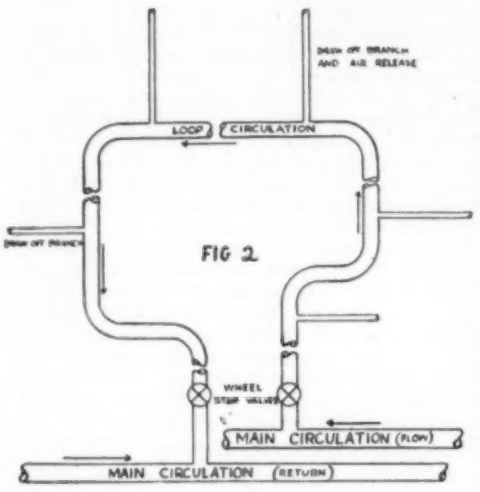


FIG 2.

shops, and other business premises. This control of the water-supply pipes is made possible by means of stop valves which are fixed in a large room behind a number of marble panels, the valves being operated by means of wheels, which are fixed in front of the marble, the result being that the central control panels have the spick-and-span appearance that is usually associated with a well-arranged marble switch panel in an electricity generating station. Three of the panels are to be seen on the right of the illustration. Two panels have three rows of valve wheels; the third, on the extreme right, has four rows. At the base of the centre panel are a number of small circular openings; these are to admit a square-headed key, by means of which draining valves may be opened so that the system of pipes can be emptied of water after the stop valves have been shut down. Between and above the wheels of the stop valves a number of pressure gauges are fixed; in case of a shortage of water, the gauge indicates the section of the installation in which the fault exists. If from any reason there is either a shortage of water, or waste due to overflow from the storage cistern, the engineer on duty has his attention drawn to the matter by the ringing of a loud-toned electric bell, and by the lighting up of one or other of a number of red electric lamps which correspond with each separate run of pipes; the engineer then looks at the pressure gauges, and at once knows the nature of the trouble and where he may find it. By entering a room behind the marble panels, a workman may, with the greatest ease, disconnect or repair any of the main stop valves.

The central control room is not situated near any apartments or bedrooms, consequently the engineer on night duty may close and open every valve after an interval of two or three days, thereby keeping them in order without causing annoyance by noise; nor will repairs to the valves cause inconvenience to anyone. The advantage resulting from having all the main stop valves in a separate room, well away from living and sleeping quarters, will be at once apparent to architects, consulting engineers, and all concerned. From the outlet side of the small draining cocks, pipes are run into an open cement channel which discharges over a trapped gulley; consequently, when either of the extensive systems of pipes has to be emptied, the rather large volume of water can be disposed of without difficulty, and without having to open the draw-off taps in the apartments, etc.

Fig. 2 shows the method of controlling the loop circulations. The stop valves are fixed behind the marble panels in the central control room, and the loop circulations (of which there are quite a number) extend to various parts of the buildings. Connected to the circulating loop are numerous draw-off branches, but only five are shown. The main flow and return pipes are 5 in. in diameter, the circulation being assured by means of an electrically-driven centrifugal pump which is connected to the return. The diameter of the loop circulations is 2½ in. The water is heated by the four calorifiers, which are to be seen in the centre of the illustration (Fig. 1); each has a capacity of 300 gallons, and is heated by a copper coil which has a heating surface of 320 sq. ft.; the coil is supplied with steam, having a pressure of 2 lb. per sq. in. The three hot-water storage cylinders are to be seen at the far end of the room, each has a capacity of 3,000 gallons. The illustration shows quite clearly that these cylindrical tanks are well insulated, to prevent loss of heat.

Fig. 3 illustrates the method by means of which the cold water services are controlled. The method is practically the same as that made use of in connection with the hot-water supply, except that each valve controls a single main instead of a circulating loop. The pipes which supply drinking water are entirely separate from those that supply the sanitary fittings; the sizes are as follows :—Drinking water: down service (A) from storage cistern, 6 in. diameter; supply header, 9 in.

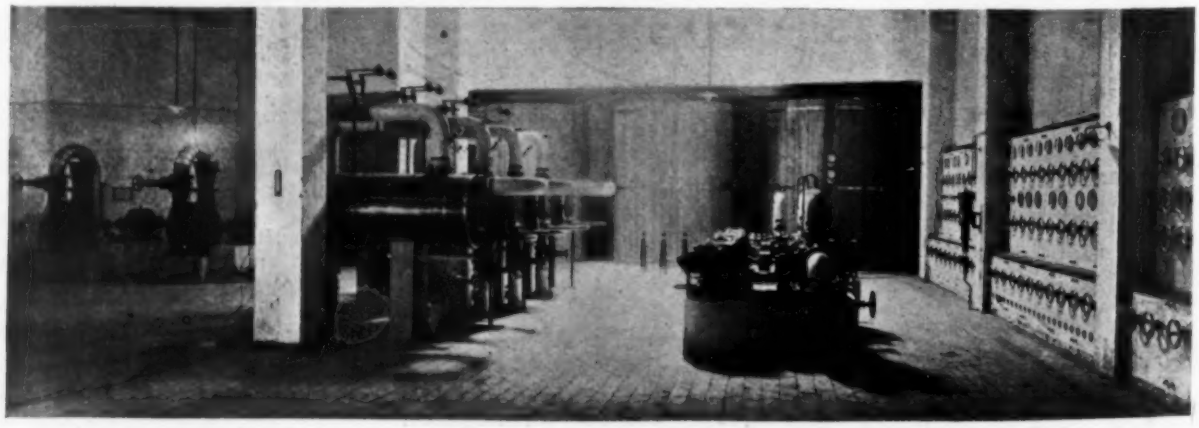


FIG. 1.

diameter; supply mains (B), 3 in. diameter. Sanitary services: down service (A) from storage cisterns, 10 in. diameter; supply header, 12 in. diameter; supply mains (B), 2½ in. diameter. It is necessary to point out that the mains (B) supplying the sanitary fittings are considerably more numerous than is the case in connection with the drinking water, hence their smaller diameters.

The buildings are warmed by a hot-water heating installation, which has 1,845 radiators, these having a total heating surface of 71,000 sq. ft. The water is heated indirectly by calorifiers, which are supplied with steam from the same boilers that supply the hot-water supply calorifiers. There are six tubular-shaped boilers, each having 1,190 sq. ft. of heating surface. Three boilers are always held in reserve, and means have been devised so that either coal or oil may be used as fuel.

Coal is fed into the boilers through a chute from the top, as illustrated by Fig. 4, the fire door serving for the purpose of distributing the coal evenly over the fire bed and removing clinkers. The coal is wheeled in barrows from the coal store and is emptied directly into the chute. As no coal is seen in the boiler house, and as also the ashes are frequently removed, the white glazed facing of the brickwork in which the boilers are set gives to the place the clean appearance of a modern hygienic bakery—it seems scarcely possible that it is associated with coal and ashes.

A system of ventilation which embraces all the most modern improvements has been installed, the air being pre-heated, screened, washed, and then brought to the temperature and the degree of humidity that is desired. In the winter the air is warmed; in the summer it is cooled. Fig. 5 shows the two main air-intake fans, which draw air in from outside the building; the square ducts, made of sheet-metal, are 3 ft. 3 in. sq. Twenty-four fans fixed at the roof level withdraw the vitiated air. An entirely separate system of ventilation is installed in the kitchens.

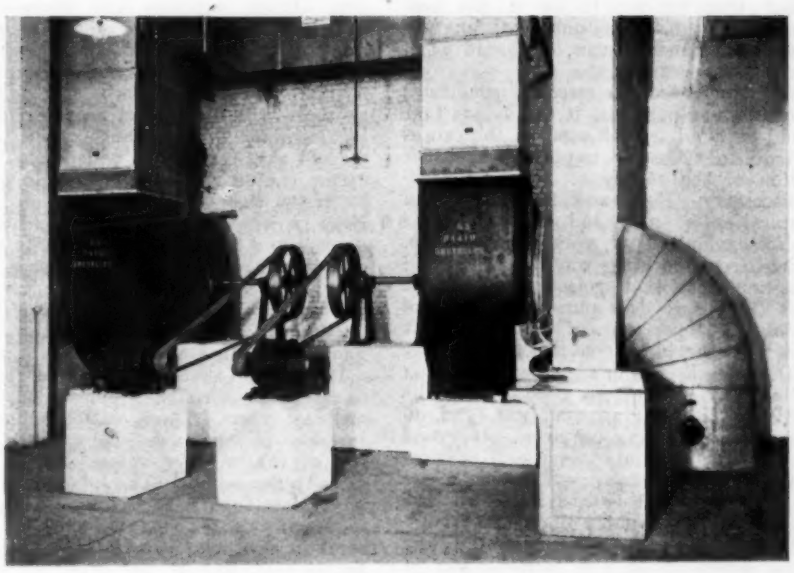


FIG. 5.

The various installations in the Residence Palace include many new and interesting features, but the most interesting of all is the control of the hot and cold water supplies from a central point; this work was planned by Mr. W. G. Perry, of Messrs. Perry & Bayley, sanitary and water supply engineers, of Paris and Brussels; he received his training in London.

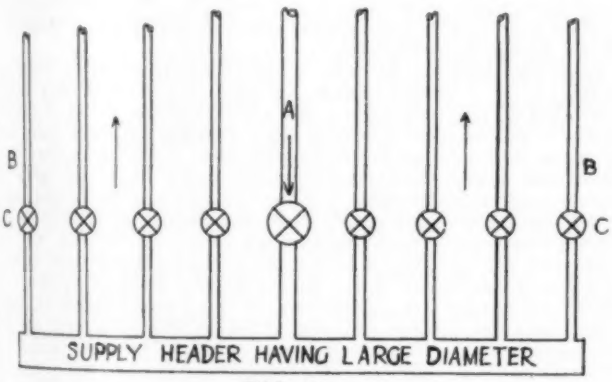
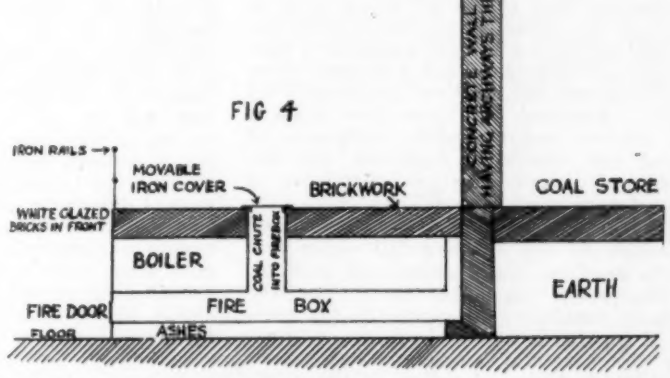


FIG 3

The arrows indicate the direction in which the water travels. Wheel stop valves are indicated by the letter C.



This illustration shows the arrangement for charging and clearing the boiler fire. It is not drawn to scale, nor are any mechanical details shown.

THE "WHY AND WHEREFORE" OF VENTILATION

By A. M. GILES, B.Sc.

It was Dr. W. N. Shaw, F.R.S., who, a few years ago, said that "Ventilation, like the weather, is a subject of universal interest, and gives rise to the widest differences of opinion." One man's fresh air is another man's draught, and the most difficult part of the ventilation problem is to reconcile the interests of both classes of people." Should the doors and windows of a room, occupied by a gathering of people, be kept shut, very soon some one will complain that the room is close and stuffy. The air has become vitiated by the respiration of the occupants, and, were the condition maintained for any length of time there would be a general outcry for "more air," which cry can be taken to mean "more clean, unvitiated air," *i.e.*, air in the condition and of the composition which hygienic authorities tell us should obtain and be maintained, by natural or artificial means, for the consumption of human beings wherever situated.

As to the composition of pure unadulterated air, we are told, in the first place, that it consists of the following gases mixed in definite proportions, viz.: oxygen, about 21 per cent.; nitrogen, about 79 per cent.; carbon dioxide (CO_2), about 0.03 or 0.04 per cent.; further, that it should be free from any other gases, such as might come from a soap or manure factory. Also it should contain a certain amount of water vapour, i.e., it should be of the correct humidity. This latter term is frequently misunderstood and inaccurately used. It is a most significant property of hygienically pure air, and, for that reason alone, should not be a source of worry or trouble, particularly to those interested in ventilation. It is not so many years ago that the Board of Trade recognised the importance of the humidity of air, since, in the regulations for the ventilation of cotton sheds, it prescribed a definite relative humidity-range, whereas previously it had confined itself to regulations regarding the content-maximum of carbonic acid gas in air.

Relative Humidity.

Air, at all times, contains water vapour, sometimes more, sometimes less. When water commences to trickle down the inner walls of our houses, it is because the air next to the walls was saturated with water vapour. The amount of water vapour necessary to saturate air increases with temperature, and a fall in temperature causes condensation of the surplus water vapour in vapour saturated air. We may speak of air as being half-saturated. It would, however, be more technical to say that its relative humidity was 50 per cent. By relative humidity of the air, then, is meant the ratio of the water vapour present at any particular temperature to the amount of water vapour required to saturate the air at that temperature; therefore a relative humidity of 50 per cent. means that the air contains half as much water vapour as would be required to saturate it at the given temperature.

Again, the question of humidity is not far removed from the reason for placing an open dish of water near a gas stove which is used for warming a room. Another item that should not be overlooked in the definition of pure air is the freedom from dust particles. This condition is not easy to obtain, for the air in a town or city is always permeated with myriads of dust particles or nuclei. Even the air in a room, in which any movement is taking place, will be full of dust particles, for we know that it is by the light reflected from these dust particles that a beam of sunlight, which has entered through a hole or crack in the shutter, is visible in a darkened room. Finally,

it is said that for air to be in the best condition for ventilation purposes, anyway for closed or confined spaces, it should be of the correct temperature.

Having enumerated the essential conditions and properties of pure air, it is obvious that we should be familiar with some of the causes which tend to make air impure and render ventilation or the supply of pure air absolutely necessary. First and foremost comes the respiration of men and animals. It is known, for example, that, volume for volume, air expired from the lungs contains a hundred times as much of that poison-gas, carbonic acid gas (CO_2), as does pure air, for pure air contains 0.04 per cent. of CO_2, while air expelled from the lungs contains about 4 per cent. CO_2. Again, air, or the life supporting part of the air—oxygen—is used up by the combustion or burning of coal, gas, and oil for heating and lighting purposes. It would seem, then, that in winter time, and particularly at night when coal fires are burning to give warmth, and oil or gas lamps to give light, ventilation becomes doubly necessary.

Further, pure air is rendered impure by the gases given off by the fermentation or decaying of animal and vegetable matter. It is also made impure from the smells from factories, such as chemical works, gas works, manure factories, paint and enamel factories, etc., and, finally, it becomes impure by what should most assuredly be avoidable, viz.: smells or gases from sewers, drains, cesspools, and rubbish-dumps.

It is obvious, therefore, that there must be put into operation methods by which the impure air that may collect at any spot may be got rid of and replaced by clean, fresh, health-giving air. There are, however, many difficulties in the way of producing even what may be recognised as the most efficient system of ventilation; nevertheless, it has to be admitted that, of the air which is to be breathed, the object of ventilation is to obtain and maintain a healthy standard of temperature and humidity, and a freedom from harmful odours and injurious suspended solid matter. Admitted that there now exists a very efficient and flourishing institution of heating and ventilating engineers, still the problem of designing for good ventilation is ever before the architect and builder.

The methods adopted to secure the required ventilation of any building fall under two definite headings, viz.: natural and artificial. To the person responsible for making the necessary ventilating arrangements the question of expense looms very large, for, whereas with the 'natural" system, the cost is only that of the initial outlay, to the 'artificial" system there is in addition the cost of the upkeep of plant, etc.

Although it has been claimed that a natural system of ventilation can be made applicable to all cases, it is sometimes wondered whether the magnitude of the operation is thoroughly appreciated. For example, consider the case of a hall seating, say, 800 people. There are many different ideas about the amount of fresh air required per person for comfort. It is, however, largely accepted that approximately 3,000 cu. ft. per person per hour will suffice. Then for 800 people during a three hours' performance the amount of fresh air required would be $3,000 \times 800 \times 3 = 7,200,000$ cu. ft. Now suppose the density of air to be 0.08 lb. per cu. ft., then the weight of air to be dealt with for ventilation purposes in this case would be over 240 tons. It follows also that, in the case of a theatre or a cinema holding 2,000 people, for efficient ventilation purposes over 200 tons of air per hour must be brought into and forced out of the building. That such a large movement of air can be produced by "natural" ventilating systems is certainly not generally accepted, or we should not find buildings, of the type mentioned above, fitted with most expensive artificial aids to ventilation.

In the case of houses or very small buildings it is probable that systems of natural ventilation are quite sufficient, but it is a fact, which one hears mentioned over and over again, that architects and builders do not make adequate arrangements for ventilation. Doors, windows, and chimneys are not sufficient. (By the way, chimneys are generally in the artificial means of ventilation.) Take, as an example, any moderately sized living-room on a winter's evening; first of all there will be noticed, near the floor, passing from the door to the fireplace, a draught of cold air which even a decently thick pile carpet cannot eliminate. Why do people like to place their slippered feet on hassocks? Next, a window is open (for ventilation purposes!) and at certain parts of the room cold draughts are encountered. Again, high up near the ceiling hot, vitiated air collects. Surely some system of natural ventilation can be devised which would be the means of remedying these uncomfortable conditions.

It is agreed that there must be a movement of air, therefore there must be outlets as well as inlets. These outlets must not be just the chimney, via the fireplace, and the top of the window unless this is right up close to the ceiling. The inlets must be somewhere low down. It has been stated that a movement of air, of about 1½ to 2 ft. per second, and which is at a temperature of between 50 and 60 deg. Fahrenheit, is just noticeable. Movement quicker than this forms a draught, and, at a lower temperature, it becomes a most unpleasantly cold draught.

One occasionally hears it said that convection currents have very little to do with ventilation, but it is an inexorable law of nature that, owing to different density conditions, warm air will rise and cold air descend. Now, each person in a room is in reality a little furnace sending out water vapour and vitiated air at a temperature of about 98 or 99 deg. Fahr. This warm mixture rises to the top of the room, and therefore in any ventilation scheme this is just where the outlets should be placed. They need not be blatantly apparent, but could be cunningly devised so as not to offend even the most sensitive of our decorative artists.

As there must be outlets to get rid of the impure air, so there must be inlets of equivalent capacity. It is impossible to be dogmatic as to the actual positions of the inlets for, at present, no system has been suggested which could be satisfactory under the multitude of differing conditions. It has been well said that the only real test of any ventilating system is experience. A manager of a large gold mine said, only the other day, that though their system of ventilation was practically perfect, yet it could be upset by the humblest workman who by inadvertence or otherwise left open or shut, as the case might be, one of the ventilating doors or shutters which formed links in the chain of the ventilation scheme.

Among the many devices that have been placed upon the market, all of which claim that by their use the ventilation of any enclosed space can and will be improved, mention might be made of a few, though in no case is one emphasised as being better than another.

(a) Louvre ventilators.—These consist of strips of glass placed at the top of a window and fitted so that they can be opened or shut like venetian blinds.

(b) Hinkes Bird's window.—By this it is claimed that air is allowed to enter the room above the heads of the occupants.

(c) Cooper's ventilators.—These are two glass discs having holes cut in similar positions in each. They are fixed on the same axis, and one can be rotated while the other is stationary.

(d) Boyle's mica flap.—This consists of a movable flap arranged over a hole passing into the chimney near the ceiling of a room.

(e) McKinnell's ventilator.—This is used for a single-story building. Through the top of the roof pass two concentric tubes which are topped by a cowl.

(f) Tobin's tube.—This consists usually of a rectangular closed duct passing vertically up the wall of a room. It has arrangements for being opened or closed at its top. The bottom is connected to perforated bricks through which outside air can enter the duct. The one advantage of this, perhaps, is that the air can be warmed as it goes up the tube past a radiator fitted in it.

Many others could be described, such as Sheringham's valves, Ellison's air-bricks, Boyle's patent air-pump, the Tuscan fire ventilating radiator, etc. The above methods of ventilation apply in the main to "natural" ventilation.

In large halls, theatres, cinemas, factories, workshops, kitchens, etc., it has been found necessary to apply mechanical or artificial ventilation. The systems in some cases are very complicated, but in the main they consist of revolving fans. Some are used to extract the impure air, and leave the fresh air to get in by a sufficient number of inlets, while others are used for forcing the air into the building, thus causing the impure air to leave by definitely arranged outlets. In many schemes we get a combination of these two systems, while at the same time the incoming air is screened, washed, cooled or heated, and finally conducted to the rooms by ducts or channels.

USE OF OIL FUEL FOR HEATING SYSTEMS

By F.I.O.B.

One of the trends of modern times is the increasing use of oil fuel for commercial purposes, and also its coming into use as firing for hot water boilers and heating appliances in commercial and domestic buildings, and many of the recent buildings in the city are so equipped. It is claimed that oil fuel is suitable for heating all classes of buildings, however large or small. In cases where it is desired to use oil fuel, either in existing hot water apparatus or in any new systems contemplated, architects and builders would be well advised to consult one of the well-known firms of heating engineers on the subject, or one of the oil distribution companies who keep a trained staff to advise property owners and persons desiring information as to the possibilities of the use of oil fuel, and are in touch with all the latest developments of the use of oil as fuel. The fuel oil is delivered to the building in bulk on a tank lorry, and it is conveyed to the storage tanks on the premises by a hose pipe. The storage tanks should previously be coated with bitumen paint to avoid corrosion. From the oil storage tanks the oil is conveyed through pipes to the burner in the boiler.

The most important part of any installation of oil fuel is the burner, as it is only by the proper combustion of the oil that satisfactory results can possibly be obtained. It has been stated that in America there are hundreds of different types of oil burners, each with their own good qualities for dealing with some kind of oil produced; it is probably just as well that this number of burners is not on the English markets, as otherwise some confusion might be created in the minds of intending purchasers. The usual type of burner is one which sprays the oil—which is atomised by compressed air—into the furnace and the oil during combustion creates an intense heat; there seems to be an axiom among oilmen that the better the oil is sprayed the better it burns. It is therefore of the utmost importance to obtain a burner which is best suited to the particular requirements of the installation in view.

There are many different types of flame produced by the different burners; through one of them the flame comes out in a long stream like water from a hose, and the air pressure behind the oil, acting on the flame produced, creates a roaring noise which is apt to be objectionable, and many devices have been introduced to produce a less noisy burner, and some types of apparatus on the market are sold as noiseless. Another type of burner produces a bulb flame, and in others

the flame could be described as like a saucer. The different types of flame are suited to different kinds of boilers; in the case of the burner which produces a flame like a hose, this would be usable for a long boiler, so that the heat should be fairly distributed, and for other types of boilers the saucer-like flame may more evenly distribute the heat, as if the great heat which could be produced from an oil burner were concentrated on a small area of the firing chamber it might have a detrimental effect on the life of the furnace work.

There is a liability with some types of burner for the flame to go out, and in such circumstances, if the oil were to continue to be sprayed in the boiler, the oil falling on the hot sides or plates of the boiler would create a dense smoke which would quickly fill the interior of the whole of the building and cover everything with smuts; or in exceptional circumstances there might be an explosion. As the result of various improvements in the type and arrangements of burners, the possibility of such an occurrence is now reduced to the minimum. In some cases there is a "by-pass" arranged in connection with the burner which supplies a gas or electric spark to light the oil in the burner when required, and another device is sometimes fitted which causes a warning bell to ring when the flame goes out, so that the person in charge would have his attention called to the occurrence, and allow of the oil being turned off before any damage occurred. Some types of burner are so contrived that when the flame goes out the flow of the oil is automatically cut off.

One of the many advantages claimed for oil installations is that with oil fuel the supply is automatic and can be controlled by a thermostat, being a contrivance which reduces or cuts off the supply of oil when a certain temperature is reached. The device may be set to work when the temperature of the living rooms or offices reaches a certain heat for the flow of oil to the burner to be reduced or cease altogether until the temperature in the apartment falls, say, 5 degrees, when the flow of atomised oil to the burner recommences and is lit by the by-pass, and thus the required heat is maintained with a minimum consumption of oil fuel. Thus it is claimed that it is possible to avoid the hot, stuffy atmosphere which is sometimes present in a building heated by solid fuel, particularly on a mild day in winter.

There is a considerable difference of opinion as to the relative running costs of firing boilers with coke, coal, or solid fuel and oil fuel. The cost of oil delivered to premises to-day is about 85s. per ton light oil and 72s. 6d. per ton for fuel oil, and although the heat units are similar in each, they would need a different type of equipment to obtain the best results. With the use of coke the furnace can be banked up and left for some hours and the attendant can employ the intervals during stoking in doing sundry repairs to the buildings or attending to electric light or bells if qualified so to do, although a good period of his time would be occupied in storage of fuel and removal of debris. A considerable storage capacity would be required for the storage of coke and the frequent using of coke and clearing away resulting debris introduces a lot of dirt and dust into the building, whereas with oil fuel comparatively small space is required for storage, as it can be delivered in bulk through a hose pipe in a few minutes and no dust is created. With the use of oil fuel it is claimed by the dealers that it is unnecessary to have a workman in constant attendance on the plant, and however that may be for a small heating set, it is usual in the case of a plant of any considerable heating capacity, when using oil fuel, for the system to be constantly supervised.

A considerable item in the cost of running any heating system must be the cost of the wages of the men in attendance on the plant and it largely depends upon how much is put down for this expense for any system to appear inexpensive or dear, but there is no doubt that in the case of ordinary commercial buildings of medium size the constant attendance of at least one skilled person would be essential. It is considered by some engineers that when oil fuel is installed it costs about 20 per cent. additional to run the plant, but there seems to be no agreement on this figure. The cost of the installation for oil firing of boilers will probably include electric motor and blowing fan, together with air mains to burner, and point and switch for electric heater to light the burner, also the oil pump, oil strainer, and oil mains to and including the burner with a thermostatic or hand-control, and oil storage tanks and vents thereto. Different systems have their different requirements, but the above will give some idea of the scope of the ordinary plant, which would be needed in addition to the boiler and furnace work required for solid fuel stoking. Any question of running costs must include for depreciation on the oil-burning equipment probably from 10 per cent. to 15 per cent. on the capital outlay, which would, of course, be saved if a coke-fired boiler were fitted.

The use of oil fuel in an efficient installation is not likely to increase the fire insurance premium on the buildings concerned, and as the flash point of the oil used is about 170 degrees, there is little danger of trouble arising through spontaneous combustion of the fuel. However, every care should be taken to have the mechanism designed and fitted by an expert firm, who will advise as to the best position of fuel oil storage tanks with proper ventilation pipes.

It is sometimes a little difficult to arrange to keep the oil storage at a proper temperature, and one way of dealing with the matter is to allow for ample storage space for oil fuel, so that if the oil by some mistake gets rather warmer than is advisable, a fresh supply of oil can be pumped in, which would tend to cool down the oil stored. Some engineers use the ordinary cast-iron sectional boiler where suitable, while others prefer the wrot-iron sectional boiler, as there is no doubt that under the terrific heat caused by the oil fuel the cast-iron boiler is apt to crack if the flame becomes unduly concentrated.

Should there be any defect in the arrangements of the flues which may cause a slight down draught, in the case of the coke-fired boiler, this would create an unpleasant smell of sulphur throughout the building, but this is not so likely to occur with oil fuel as the compressed air in the burner would carry away any fumes which might occur through the flue dampers being out of position.

COMBINATION HOT-WATER APPARATUS

CENTRAL HEATING AND TAP SUPPLY

By FREDK. W. DYE.

THE growing demand for small coke-burning boilers for hot-water supply is due to the increasing use of the gas cooker, and this boiler has been found not only effective (and economical) for tap supply, but, in most cases, has a margin of power for some other heating duty. This is now so recognised that most makers give two ratings to these boilers, one for tap supply, the other for central heating (radiators or hot-water pipes). It can be, and frequently is, arranged for the boiler to do both duties within the limits of its power.

An arrangement for the piping for the two hot-water systems may be as Fig. 1, which needs no explanation, but it opens up the question whether radiators can be on a domestic hot-water apparatus without discolouring the water by rust. In soft-water districts a single radiator could not be served in this way, nor, as is generally known, may the pipes and storage tank be of iron; but with hard water rusting is less in evidence. With the latter, however, there has to be a limit to the number of radiators, if the water is not to be noticeably discoloured, and experience has shown that two may be used (if of moderate size) without prospect of trouble, while three are often risked without complaint following.

It is the long summer period when radiators stand idle, with stagnant water in them, that induces noticeable rusting, and more liberty could be taken if heated hard water never ceased working through the radiators.

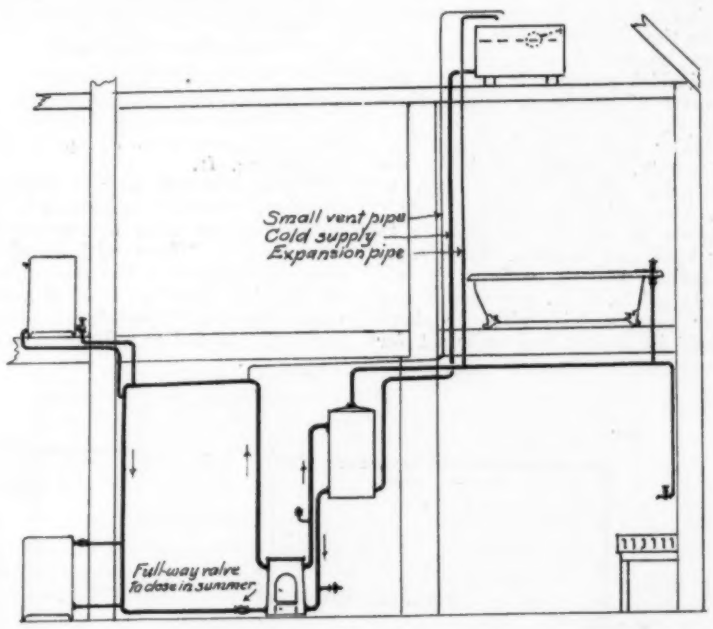


FIG. 1.

In this connection it may be explained that complaint can arise, when not expected, due to an apparatus being newly erected in late spring so that the radiators have no use for some four or five months after they are installed and filled with water. Where this is anticipated the radiators (and pipes) should be galvanised; or coated internally with a good coat of limewash. The latter is made of newly slaked quicklime mixed with water to as thick a consistency as will run through and coat all inside surfaces, it being allowed to get quite dry before water enters the apparatus.

When the number of radiators, or the quality of the water, creates a doubt as to

rust causing trouble, the usual storage cylinder is replaced by an "indirect heater," or calorifier, as Fig. 2. This is a double-chambered storage cylinder, shown in section by Figs. 3 or 4 (there are other patterns), and it will be seen that the boiler-water and the tap-water do not mix. With waters known to cause rust this heater is constructed partly or wholly of copper.

In the illustration (Fig. 2), the heating flow-pipe is shown going to the roof, or the attic floor, and there extending horizontally (with the usual slight fall) in whatever direction will serve the drop returns, or "drops," to which the radiators are connected. Only one drop is shown in Fig. 2, but there may be two or more according to the location of the radiators, in which case they all join the horizontal return at or below ground-floor level. It is not absolutely necessary to carry the flow-pipe to the roof if it can traverse a lower floor, but, as a rule, the latter plan involves more work, also a deep notching of joists which is not recommended.

The sketch (Fig. 2) shows the lower horizontal return carried beneath the ground floor, which means below the level of the boiler. Many fitters experience a doubt as to whether the return may be "dipped" in this way, or how much it may be dipped. A dip opposes the circulation. It offers resistance to what creates the water movement, but how much? In this instance (Fig. 2) the circulation is strong enough to make a 12 in. dip in the return unnoticeable in effect. There is a proper method of calculating the effect of dips, but for common use it can be allowed that a return may run below a boiler one-fifth the depth that the flow rises above the boiler. In this case a dip about 4 ft. deep would be practicable, if necessary.

There remains a detail of some importance, this being the power of the boiler. Briefly, boilers show a greater efficacy, and are allowed a much higher rating, for tap-supply work than for heating; and it is necessary to realise this as some very disappointing experiences have resulted through not understanding where the difference lies.

It may first be stated that the modern (and very desirable) practice is to give the ratings or powers of boilers in British thermal units, or B.Th.U. The price-list of a well-known boiler says "Rating for hot-water supply only," 52,000 B.Th.U. per hours, or 52 gals. raised from 50 deg. to 150 deg. F., and while the word "only" certainly appears it affords no clue as to what heating work can be done. With regular central-heating work a radiator is calculated to emit 144 B.Th.U. per square foot of surface per hour, and if, with the above boiler, one half its power was sufficient for the tap-water it might be supposed that the other half was equivalent to (26,000 ÷ 144 =) 180 sq. ft. of radiator surface, but this would result in failure.

In another catalogue, by a very well-known

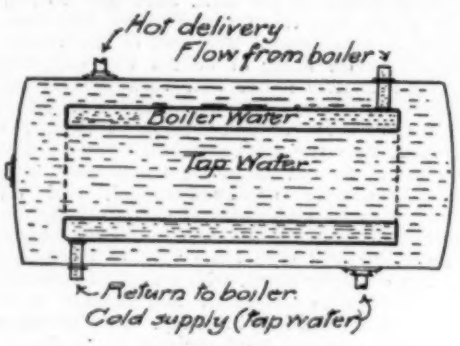


FIG. 3.

maker, greater care has been exercised, as the printed figures (for one size) run :—

Hot Water Supply only.		Heating only.	
B.Th.U. per hour	Gallons 50-150°	B.Th.U. per hour	Direct Radiation sq. ft.
66,000	66	26,800	185

From this it will be seen that 26,000 B.Th.U. of tap-supply rating would serve

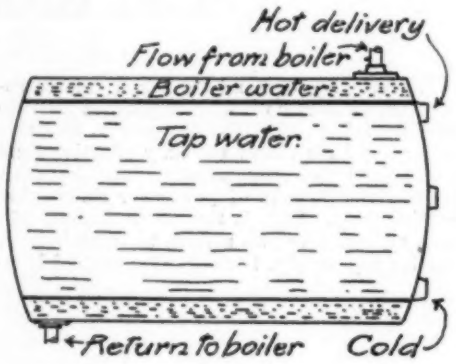


FIG. 4.

but little more than 70 sq. ft. of radiation, not 180 sq. ft.

The most simple way of dealing with this question, when an apparatus is decided on, is first to see what the proposed radiation amounts to. There will be the radiators, also the surface of the piping which serves the heating section. Having found this, see what the maker's catalogue says as to the radiation the boiler will serve and what proportion of power will be left for the tap supply. Thus, if the total radiation intended to be installed is 90 sq. ft., and the boiler is rated to serve 185 sq. ft. (as example just given), then it is known that the radiation will account for half what the boiler can do. This being so, there will be half 66,000 B.Th.U. for the tap supply, that is 33,000, or 33 gals. per hour heated to full dish-washing temperature, viz., 150 deg. in the boiler, 140 deg. in the tub.

It may be well to add that while makers' catalogue ratings are actual, and can be worked up to, it is the better plan to deduct about one-fifth to one-fourth from the printed figures if a domestic servant is to attend to the fire.

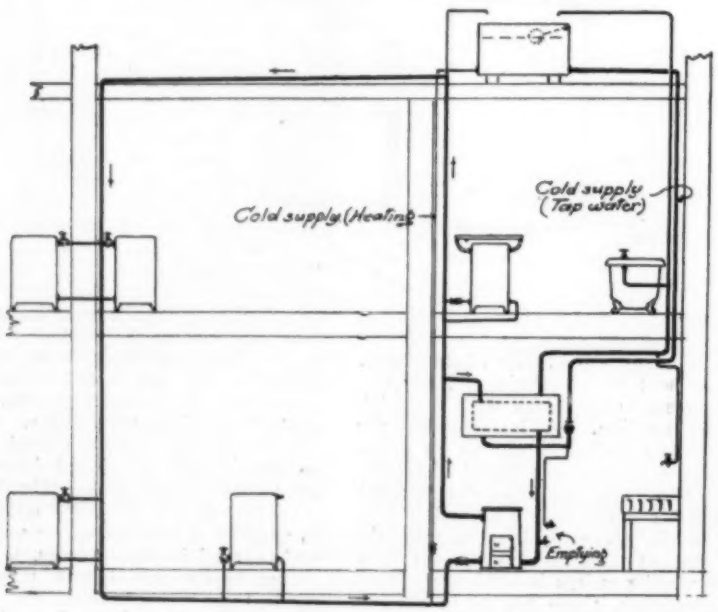


FIG. 2.

RADIANT HEATING*

THIS 60-page pamphlet by the Medical Research Council, Industrial Fatigue Research Board, contains the results of experimental work upon various systems of heating in actual practice. In the first few pages dealing with methods of measurement by thermometers and thermopiles and the radiation from various surfaces, the interesting fact emerges that the radiation from surfaces painted green or white, whether "flat" or in enamel, is the same as that from a dead black surface, whereas aluminium paint has only an emissivity equal to 70 per cent. of the above. Having regard to the wide use of metallic paints this is important. It is generally accepted that heat resulting from radiation is preferable to that received from convection currents of hot air, and though it is recognised that much radiant heat is emitted by high-temperature sources like open fires, it is not generally appreciated that bodies at temperatures of an ordinary hot pipe can emit most of their heat as radiation. We are told that if the source of heat is in the ceiling, as can be arranged by panel heating, almost the whole is radiant, while if from walls so heated some 60 per cent. is radiated, while floor heating gives rise to a great proportion as convected heat by air currents.

The report gives particulars of the authors' investigations in offices and factories, illustrated by photographs and numerous graphs and tables. These figures show great equality of air temperature in rooms which are panel-heated, even most distant points from the source of heat being only a degree or so below positions a few feet from the heating surface. Floor heating, applied in some recent buildings, was also investigated, from which it would appear that floors heated by hot-water pipes placed in them have been found to have a temperature as high as 80 degrees F. with an air temperature in the room of 57 degrees. Electric heating by tubes raised to as much as 270 degrees F. is said to produce a very even heat distribution.

The authors commend the panel system, but refer to the advantages of ordinary radiators in checking down-draughts by the production of strong convection currents. A good deal might be said on this subject from other aspects, but, as stated, this investigation is physiological.

Roman Remains at Colchester.

For some time excavations have been proceeding in the grounds of the Holly Trees, Colchester, and the work has now revealed the foundations of a Roman building. Well-preserved walls standing 5 ft. to 6 ft. high in places are to be seen, while some 15 ft. below the present surface of the ground is revealed a water tank 40 ft. by 20 ft. Two rooms adjoining have also been found, and the work of excavation is to be proceeded with. The exact purpose of the building is at present a mystery. At one time the foundations were regarded as those of the old Roman Baths of Camulodunum.

* "A Physiological Investigation of the Radiant Heating in Various Buildings." By H. M. Vernon, M.D., and M. D. Vernon, M.A. Assisted by Isabel Lorrain-Smith, M.A. H.M. Stationery Office. 2s. 1928.

ARCHITECTS' & BUILDERS' INQUIRY BUREAU

We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.

May we appeal to our correspondents to submit their queries on paper of a size easily filed, and written as legibly as possible, or, better still, in typewriting?—ED.

Contract Question.

[REPLY TO "B. C. F.," SEPTEMBER 21.]

SIR,—P.C. items and provisional amounts are much the same, except that p.c. items are those smaller furnishings which only require fixing by the general contractor, and provisional amounts are those larger items which are usually sub-let.

Although it is advisable that expenditure under all these items, etc., should be dealt with through the general contractor, and that in any case he should be given the opportunity of supplying or tendering for items of work which he himself is able to supply or carry out, yet there is no rule of law which enables him to enforce such procedure. On the contrary, it is well known that by "custom" an architect has power to take away from the general contractor all these items, etc., and if no parts of the amounts have been expended by him, to credit them entirely, together with the added profits or allowances for unloading, fixing, etc., as extended on the bills of quantities.

CONTRACT.

SIR,—I do not agree that, as a general policy, "all expenditure under p.c. items should be dealt with through the contractor." Some architects prefer this method, others keep all p.c. amounts out of the general contract. As a surveyor, I have found that both methods have been successful, provided the contract documents are quite clear upon the point, and that the policy has been agreed before work is commenced.

The answers to the two questions must depend upon the provisions of the clauses in the documents forming the contract :—

(1) If the 2½ per cent. mentioned is discount for cash, it is allowed only to the person paying cash.

(2) The contractor's addition for profit must stand either as a lump sum or adjusted *pro rata* to the p.c. amount paid, whichever method is provided for throughout the work. This applies whether the money is paid by the contractor or not.

The last sentence in the question is surely an unwarrantable aspersion on the honour of the architectural profession! T. H. R.

Road Widening Question.

[REPLY TO "W. R. W.," SEPTEMBER 21.]

SIR,—Your correspondent has been entirely misled. Except the share which he will naturally pay as a ratepayer, there is no act to compel him to defray the cost of street improvements such as this. RATES.

SIR,—Unless the local authority is acting under some local Act, which is improbable, then under section 154 of the Public Health Act, 1875, an urban authority (or rural authority where the section is in force) may purchase any premises for the purpose of widening, opening, enlarging, or otherwise improving any street; and by section 4 of the Act, "premises" includes lands.

Under section 33 of the Public Health Act, 1925 (in districts where this section has been adopted), the local authority may prescribe an "improvement line," i.e., a line in relation to either side of the street to which the street is sooner or later to be widened. Also further provisions as to improving streets are contained in sections 66 to 74 of the Towns Improvement Clauses Act, 1847.

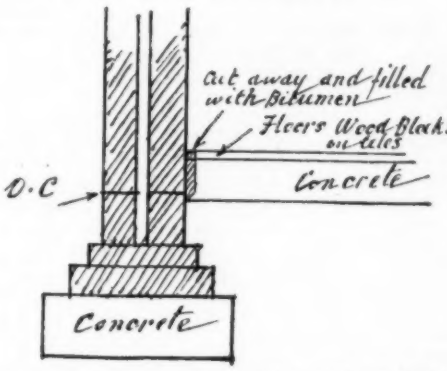
It will be noticed that the local authority concerned must in purchasing pay compensation for the land taken, and in the case of a street repairable by the inhabitants at large, the question of making up the new portion of the street is taken into account in assessing the amount of the compensation payable, and any benefits accruing to the person whose land is taken is set off against the compensation. The local authority is subsequently responsible for keeping the added strip in repair.

It would appear, however, that a local authority is not precluded from incurring expense in acquiring lands for the widening of a street, by the fact that the street is not repairable by the inhabitants at large, nor from apportioning the expenses of so doing as also making up the additional strip on the frontagers; but the question raised is a very important question, and to enable a fuller reply to be given, the Act under which the land is being acquired should be quoted.

The case of Portsmouth Corp. *v.* Hall (1909), 98 L.T. 513, in which it was held that an agreement to purchase land freed the frontagers from any liability for making up the street, should be perused. ROAD.

Damp Walls.

SIR,—The walls of a house show damp about a foot high everywhere inside. Floors are solid, and the dampcourse is about 4 in. below floor. I have cut round 1 in. from wall



down to dampcourse and filled with pitch, but with very little improvement. I am now inclined to think that the slates are porous. Perhaps some of your readers have had a similar experience. A. B.

Preliminary Estimates.

[REPLY TO "PRACTICE," SEPTEMBER 21.]

SIR,—An architect's preliminary estimate must be within 10 per cent. of the lowest tender obtained. ARCHITECT.

Sir,—There is no fixed margin; and although ten per cent. below the lowest tender would appear to be a reasonable estimate, there is no rule of law making it so. Indeed, in certain circumstances, an architect who advises a client that the building he has designed will cost much less than the lowest tender received may render himself liable for negligence.

Unless there is a contract between the parties, there is no rule enabling an architect to recover fees on any defined scale for abandoned work. He can only recover what will satisfy the Court is a reasonable charge for his services.

Flooring Deposit.

SIR,—I enclose a sample of material which from time to time collects on the flooring of a bay window to a house in Croydon, Surrey. I cannot account for this, and if you can advise me as to the cause of it, or help me in any way, I shall be greatly obliged.

W. R. H.

[Without chemical analysis, it is difficult to say what the material contains. A little more information as to conditions would help. What is the flooring composed of? Is it on ground or first floor? Does the deposit collect on the top surface, or, if a hollow floor, on the under surface? The material rather looks like the rotted underside of linoleum, and if this is on boards, there is no need to look much further for the trouble. But this may not be the case. FLOORING.

Preservation of Stone.

Replies to this inquiry have been forwarded to our correspondent by post.

ALL-ELECTRIC HOUSE, BIRMINGHAM

This house has been designed to be in keeping with the new "domestic tariff" policy of the Birmingham Corporation.

The front exterior has charm and simplicity, and attention is drawn to the artistic lantern, not only decorative, but also designed as a guide and to provide adequate illumination on the step below. The hall space is used to the best advantage, and the stairway itself is not allowed to encroach upon the main gangways. Plugs are freely provided for radiators, vacuum cleaners, etc. Facing the door is to be seen an electric clock. All clocks throughout the house are electrically controlled from a master clock placed in the cloak-room immediately on the left as one enters the hall. The lounge is the main room of the house. Its size is considerable, for as a living-room it is necessary. The double-fold window enables it to be converted to an open-air garden room. The main lighting of the lounge is accomplished from two points on the ceiling so arranged that adequate illumination is provided at all parts of the room. The fireplace, by Messrs. Parker, Winder & Achurch, gives the realistic effect of a coal-fire without its attendant disadvantages of fuelling and dust. A wireless plug is provided in nearly every room so that the broadcast programmes may be enjoyed as desired.

The dining-room is well-proportioned, and equipped with doorways so that service is kept away from the hall. No actual fireplace is shown, but the electric fire is placed against a tiled back. Between the scullery and the kitchen is the refrigerator. The kitchen is equipped with a modern electric cooker. The indicator board clearly shows the room to which attention is desired for service purpose, while bells of different tones indicate a caller at the front or back. A fourth bell calls attention to the fact that the batteries for the clock system need replenishing.

In the scullery itself is a "P. W. & A. Beeston Independent" boiler, for use as a rubbish destructor.

Just above the sink is a small electric geyser which gives a hot-water supply usable for tea-making, etc., without drawing from a cistern.

Bedrooms are fitted with plug-points for wireless, lighting, etc., while the bathroom has an electric towel-rail which also warms the room itself.

The house, which was designed by Mr. W. T. Benslyn, A.R.I.B.A. (of Messrs. Surman & Benslyn), to the instructions of Messrs. Parker, Winder & Achurch, Ltd.—who were responsible for all electric fitments—was carried out by Messrs. T. Elvins & Sons, Handsworth.

OBITUARY.

Edmund James Harrison, L.R.I.B.A.

We regret to announce the death of Mr. Edmund James Harrison, of Crouch End, N., formerly of Gray's Inn-square. He was a pupil of the late Henry Saxon Snell, with whom he worked until he started practice in 1888. He held the appointment of architect to the Chelsea Board of Guardians for 32 years, and had recently relinquished that and the appointment he held for 14 years with the Mile End Board of Guardians on their amalgamation with two others to form the Stepney Union. He held the appointment of architect to the Islington Board of Guardians to the time of his death, having served that Board for 18 years. Mr. Harrison also carried out a great deal of work for the Wandsworth and Clapham Union Board of Guardians. Amongst his successes gained in competition was the Rotherham Municipal High School for Girls, carried out in conjunction with Mr. J. T. Holgate.

THE BUILDING TRADE

LANDLORD AND TENANT

Consents to Assignments.

WE may call attention to a decision recently given, Gardner & Co. *v.* Cone (*Weekly Notes*, August 11), because it contains one of the first pronouncements made by the Courts upon the effect of section 19, subsection (1) (*a*), of the Landlord and Tenant Act, 1927, which provides that in all leases, whether made before or after the commencement of that Act, containing a covenant against assigning, under-letting, charging, or parting with the possession of the demised premises, or any part thereof, without licence or consent, such covenants shall, notwithstanding any express provision to the contrary, be subject to a proviso that such licence or consent shall not unreasonably be withheld.

In the case in question, the plaintiffs, who were brewers, by an assignment dated January 7, 1925, were the holders of the reversion of the residue of a term under a head lease held by one Norman. In 1919 Norman had demised the premises by an under-lease for the term of 21 years to one of the defendants in this action who was seeking to assign the same. This under-lease contained a covenant that this defendant should not assign or part with the term without the consent of the lessor, and it is to be observed that this covenant did not contain the usual proviso, "such consent not to be unreasonably withheld." Notice of the assignment of the term under the head-lease to the plaintiffs had been given to this defendant. In May, 1927, this defendant desired to assign the under-lease of the premises, which were a fully licensed public-house, to the second defendant in the action, but the plaintiffs had refused their consent. There was some conflict of evidence as to this refusal, as the defendants alleged that the plaintiffs had not refused their consent, but had orally agreed to the assignment, but on condition that the public-house should be tied to them, a condition which the defendants contended was contrary to the provisions of section 144 of the Law of Property Act, 1925, which enacts that in all leases containing a covenant against assigning, under-letting, etc., unless the lease contains an express condition to the contrary, the covenant shall be deemed to be subject to a proviso to the effect that "no fine or sum of money in the nature of a fine" shall be payable in respect of the licence or consent, and they had assigned without leave. The Court in this case found that the plaintiffs had refused to give their consent without giving any reason, but that they had not, as alleged, given consent subject to the tie, although it expressed the opinion that had that been the case it would have been a fine which is defined in section 205, subsection (1) (xxiii), of the Law of Property Act as "including a premium or foregift and any payment, consideration or benefit in the nature of a fine, premium or foregift," but that in this case it could not be said that the conduct of the plaintiffs was such as to enable the defendants to say that there had been a positive or sufficiently clear refusal of consent except on the terms of a fine represented here by the tie. The Court then referred to West *v.* Gwynne (1911, 2 Ch. 1), where it was held that if the refusal was based upon such a ground, then the assignment could be made without leave (a case which will be found in our eleventh article on Landlord and Tenant, January 6, 1928, where, however, a wrong reference was given to this case), but came to the conclusion that as the law stood before the passing of the Landlord and Tenant Act, 1927, in such a case there must be a definite refusal by the lessor to give consent except on condition that a fine was paid. The plaintiffs were therefore entitled to bring this action for possession for breach of covenant unless section 19, subsection (1) (*a*), of the Landlord and Tenant Act, 1927, applied to this case.

The Court held that it was impossible to hold that the section had the effect contended for by the defendants of making something which was a breach of contract at the time it was committed (that is, the assignment without leave, before the Act came into operation), a lawful act *ex post facto*. That is to say, although the Act is retrospective in that in all leases, whether made before or after the passing of the Act (March 25, 1927), the proviso that consent shall not unreasonably to be withheld is to be implied, it does not heal breaches actually committed before that date.

NEW BUILDINGS IN LONDON

Beckenham-lane.—SHOPS.—A building site at the corner of High-street and Beckenham-lane, Bromley, has been sold by Messrs. Baxter, Payne and Lepper on behalf of the Bromley Corporation to Messrs. Garrett. White and Poland, of Hanover-street, W., on behalf of clients, and it is proposed to erect an extensive block of shops.

Becontree.—SHOPS.—Tenders are under consideration for a block of eight large shops, with two floors of living accommodation above, in Goresbrook-avenue, on the L.C.C. housing estate. The plans have been prepared by the Architect's Department, Messrs. Hillier, Parker, May & Rowden, 27, Maddox-street, W.1, and the quantity surveyor is Mr. T. N. C. Mumby, Parliament-mansions, Victoria-street, S.W.1.

Buckingham Palace-road. — PREMISES. — Messrs. George Trollope & Sons, estate agents, announce the proposed erection of a large block of office premises in Buckingham Palace-road, Eccleston-street and Eccleston-place, S.W.1. The site is being cleared by Mr. W. Clark, S.E.11, and plans are being prepared by Messrs. Robert Angell & Curtis, 133, Regent-street, W.1.

Camden Town. — REBUILDING. — Messrs. Courage & Co., Ltd., brewers, have plans under consideration for the rebuilding and improvement of their property in High-street, N.W.1, known as the "Wheatsheaf" public-house.

Catherine-street.—THEATRE.—Messrs. F. G. Minter, of Putney, have secured the contract for the erection of the new "Duchess" theatre in Catherine-street, W.C.2. Mr. Ewen Barr, 1, Lincoln's Inn Fields, W.C.1, is the architect.

Clerkenwell.—ALTERATIONS.—The "Globe" cinema in Skinner-street, E.C.1, is to be considerably altered and enlarged, including a new gallery and staircase, raising roof, etc. The contract for the first part of the work has been placed with Mr. C. A. Wiseman, 2, Eversley-crescent, Osterley. The architect is Mr. Ernest Cannell, 259, High Holborn, W.C.4.

Croydon.—HOUSES.—The Council has accepted the tenders of Messrs. Blackwell & Meyer, Erith-road, Bexley Heath, at £35,997 and £28,125, for the erection of 90 houses on the Mitcham-road housing estate, section 4, and 64 houses on Hermitage-road housing estate, respectively.

Croydon.—HOUSES.—Messrs. W. Bragg & Sons, Ltd., 38, Park-avenue, Porthcawl, are to build, at £46,998, 120 houses on the Mitcham-road housing estate, for the Council.

Croydon.—RECONSTRUCTION.—Plans have been submitted and approved for the extension of the Croydon Baths. The scheme comprises the entire re-erection of the front portion of the building, and provides for 30 men's slipper baths, 15 women's slipper baths, housing accommodation for the superintendent, boilers and heating plant, laundry, conveniences, etc. Tenders are to be invited, and application be made to the Ministry of Health for sanction to the loan of £24,000, the estimated cost of the scheme.

Croydon.—SHOPS.—On a site at 21-41, South End, a block of shops and flats are to be erected for the Croydon County Borough. The contract has been given to Mr. E. H. Smith, of Croydon, the price being £11,790.

Draycott-avenue. — REBUILDING. — Plans have been approved for the building of a large block of residential flats in Draycott-avenue, S.W.3. The architect is Mr. William A. Lewis, A.R.I.B.A., 11, Finsbury-square, E.C.2. The builders will be Messrs. Bovis, Ltd., 43, Upper Berkeley-street, W.1.

Ealing.—VICARAGE.—Having sold the site of the Christ Church Vicarage in Ealing Broadway, W.3, the Vicar and Wardens are shortly to build a new vicarage. Plans are being prepared by Messrs. William A. Pite, Son & Fairweather, Carteret-street, Westminster, S.W.1.

Edmonton.—FACTORY.—The local Council has sanctioned the application of the Apex Artificial Silk Co. for the erection of new factory buildings at the Angel Factory Colony.

Greek-street. — RESTAURANT. — Alterations and additions are being made at 48, Greek-street, W., by Mr. H. S. Lipscombe, builder, Rathbone-place, W. The constructional steel work is being supplied by Messrs. Young & Co., 6, Queen Anne's-gate, S.W.1.

Hendon.—HOUSES.—The Economic House Builders, Ltd., Brent-street, Hendon, are proposing to erect 60 flats on the land adjacent to "The Fosters," in Brent-street, Hendon.

Hornsey.—BATHS.—The Hornsey Town Council has let the building contract for the erection of open-air swimming bath in Park-road, Crouch End, to Messrs. Arundel, Ltd., of Stratford, at £8,920.

Leadenhall-street. — BANK. — The L.C.C. have approved plans for the erection of a new building on the site of Nos. 140-144, for the Midland Bank, Ltd. The architects are Messrs. Whinney, Son & Austen Hall, 3, Old Jewry, E.C.2.

Marylebone.—ENLARGEMENT.—Property in Marylebone High-street, W.1, has been acquired by Messrs. Barclays Bank, Ltd., for the enlargement of their branch at No. 5a. The plans for the new building have been prepared by Mr. J. H. Taylor, 61, Chancery lane, W.C.2.

Mitcham.—BUILDING.—A company is to be formed to develop a large building estate in London-road, and the scheme includes the erection of extensive numbers of houses, shops, a market and public hall, cinema, etc. The architects are Messrs. Chart, Son & Reading, Bank-chambers, Croydon.

Nelson-street.—REBUILDING.—The tender of Mr. F. R. Hipperson, 6, Broad-street-place, E.C.2, has been accepted for the rebuilding of the "Lord Nelson" public-house, E.C.1. The plans have been prepared by Mr. G. G. Macfarlane, surveyor to Messrs. Watney, Combe, Reid & Co., Ltd., brewers. The cost will be approximately £9,000.

Pall Mall.—REBUILDING.—No. 29 is at present being demolished prior to rebuilding operations. The new premises have been designed by Messrs. Sydney Tatchell & Geoffrey Wilson, FF.R.I.B.A., Bank-chambers, 32, Strand, W.C.2, and will be built by Messrs. Higgs & Hill, Ltd., Crown Works, South Lambeth-road, S.W.8.

Poultry.—PREMISES.—Alterations are to be effected to the premises at No. 14 for Messrs. Wheeler & Co. (London), Ltd., tailors. The builders are Messrs. H. J. Gower, Ltd., 5, Bow-lane, E.C. The architect is Mr. Edgar S. Underwood, F.R.I.B.A., 3, Queen-street, E.C.4.

Willesden.—LIBRARY.—Tenders are being invited by the Willesden Urban District Council for the erection in Olive-road, Cricklewood, of a new branch library.

RATES OF WAGES IN THE BUILDING TRADE

[Every endeavour is made to ensure accuracy but we cannot be responsible for errors.]

	Masons.	Bricklayers.	Carpenters Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers.
Aberdare	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Accrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Aldershot	1/4	1/4	1/4	1/4	1/4	1/4	1/0	1/0
Alfreton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Alnwick	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Altrincham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Ashford Kent	1/4	1/4	1/4	1/4	1/4	1/4	1/0	1/0
Ashington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Ashton-under-Lyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Aylesbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Aylsham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Banbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Barnsley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Barnstaple	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Barrow-in-Furness	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Barry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Basingstoke	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Bath	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Bedford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Berwick	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bexhill	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Birkenhead	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Birmingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Bishop Auckland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Blackburn	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Blackpool	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Bolton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Bournemouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Bradford	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Bradford-on-Avon	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Braintree	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Brentwood	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bridgwater	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bridlington	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Brighton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Bristol	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Bromsgrove	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bromyard	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11¾
Bungay	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¼
Burnley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Burton-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Bury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Buxton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Cambridge	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Canterbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Cardiff	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Carlisle	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Chatham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Chelmsford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Cheltenham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Chesterfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Chorley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Cirencester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Clacton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Colchester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Coventry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Cranbrook	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¼
Crewe	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Cromer	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Darlington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Deal	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0¾
Denbigh	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Derby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Devizes	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Dewsbury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Doncaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Dorchester	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Dorking	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Dovercourt	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Driffield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Droitwich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Dudley	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Durham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Eastbourne	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
E. Glam. (Mon.Val.)	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Ely	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Exeter	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2
Exmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Fakenham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Felixstowe	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Folkestone	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Frome	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Glossop	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Gloucester	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Godalming	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Goole	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Gosport	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Grantham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Great Yarmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Grimsby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Guildford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Halifax	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Harpenden	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Harrogate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Hartlepools	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Harwich	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Hastings	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hatfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Hednesford	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Hereford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1¼
Herne Bay	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hertford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Hitchin	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Hoddesdon	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Holt	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¼
Huddersfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Hull	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Hunstanton	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Huntingdon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Isle of Wight	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11¾
Ipswich	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Keighley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Kettering	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Kidderminster	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
King's Lynn	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Lancaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2

	Masons.	Bricklayers.	Carpenters Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers.
Leeds	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Leicester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Leighton-Buzzard	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Lichfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Lincoln	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Littlehampton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Liverpool	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Llandudno	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Llanelly	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
London:								
12 m. radius	1/9	1/9	1/9	1/9	1/9	1/9	1/8	1/4
12-15 m. radius	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/3½
Loughborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Lowestoft	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Luton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Macclesfield	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Maidstone	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Malvern	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Manchester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Mansfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Margate	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Market Harb'rough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Matlock	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Melton Constable	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¼
Melton Mowbray	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Merthyr Tydfil	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Middlesbrough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Newark	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Newbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Newcastle-on-Tyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Newcastle-ur-Lyme	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
New Forest	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newmarket	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newport, Mon.	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Northampton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Norwich	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Nottingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Nuneaton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Oakham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Oldham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Oxford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Paignton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Peterborough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Plymouth	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Pontypridd	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Portsmouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Preston	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Ramsgate	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Reading	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Redcar	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Redditch	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Reigate	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Retford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Ripon	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Rochdale	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Rochester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Rugby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Saffron Walden	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11¾
St. Albans	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
St. Helens	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Sawbridgeworth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Saxmundham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11¾
Scarborough	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Sevenoaks	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Sheffield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Shrewsbury	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Sittingbourne	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Southampton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Southend-on-Sea	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Southport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
South Shields	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Stevenage	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Stockport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Stockton-on-Tees	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Stoke-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Stourbridge	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stourport	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stowmarket	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Stratford-on-Avon	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Stroud	1/5	1/5	1/5	1/5	1/5	1/5	1/4½	1/0½
Sunderland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Swaffham	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¼
Swansea	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Swindon	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1¼
Tamworth	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Taunton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Thetford	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Torquay	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Totnes	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4	1/0
Trowbridge	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Tunbridge Wells	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Uttoxeter	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0¾
Wakefield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Walsall	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Wallsend	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Warminster	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Warrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Warwick	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Wells (Norfolk)	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¼
Welwyn Gar. City	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
West Bromwich	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Weston-sup.-Mare	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1¼
Weymouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Whitby	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Wigan	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Winchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Windsor	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Wisbech	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Wolverhampton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾
Woodbridge	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Worcester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Worksop	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Worthing	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Wrexham	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2¼
Wroxham	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11¼
Wymondham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11¾
York	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2¾

For rates of wages in the Building Trade in Scotland, see page 533.

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given is the latest date when the tender, or the names of those willing to submit tenders, may be sent in, the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, etc.

OCTOBER 1.

Edinburgh.—Ventilator.—Over men's and boys' spray rooms at Portobello baths, for T.C. E. J. MacRae, A.R.I.B.A., City Architect.

Gillingham.—Centre.—Maternity and child welfare centre, for T.C. J. L. Redfern, B.E. and S.

Glasgow.—Painting.—Painter work of several buildings, etc., comprising contracts Nos. 1 and 2 in connection with erection of Mearnskirk Sanatorium, Newton Mearns, Renfrewshire, for T.C. D. Stenhouse, T.C.

Leigh-on-Sea.—Public Conveniences.—Erection of, for the C.B. of Southend. R. H. Dyer, Borough Engineer, Municipal Buildings, Southend-on-Sea. Dep. £2.

London.—Dwellings.—(1 Erection of five blocks at Hughes Fields estate, Deptford, and Greenwich; (2) two blocks of dwellings and other incidental works at Comber estate, Wyndham-rd., Camberwell, for the L.C.C. Architect to the Council, The County Hall (Room No. 3), Westminster Bridge, S.E.1. Dep. £2 in each case.

London, W.C.1.—Motor Garage.—Erection and completion of, in Goldsmith-st., W.C.2, for the Holborn B.C. J. E. Parr, A.M.Inst.C.E. B.S., Town Hall, High Holborn, W.C.1. Dep. £2 2s.

Morley.—Paving.—Relaying of about 40 sq. yds. of mosaic paving to balcony floor in Town Hall, for T.C. F. Turner, B.E. and S.

Nottingham.—Demolition of premises in Upper Parliament-st. and Market-st., for T.C. T. Wallis Gordon, City E. and S. Dep. 10s.

Pudsey.—Heating.—Installation in connection with baths, for T.C. Basil H. Noble, B.S. Dep. £2.

Ramsey.—Lavatory.—Public lavatory, for U.D.C. V. J. Bateman, S., 36, Great Whyte.

Scarborough.—Houses.—114, on Northstead estate, for T.C. H. W. Smith, B.E. Dep. £2.

Steyning.—Alterations.—To men's south dormitory block at Poor Law Institution, Shoreham-by-Sea, for B.G. T. A. Brooks, S.

Sunderland.—Painting.—Internal and external painting schools, for County of Durham E.C. T. G. Shaw, District Clerk, Baltic-chambers, John-st.

OCTOBER 2.

Bristol.—Factory.—At Wapping Wharf, for G.W.R. F. R. B. Davis, secretary, Paddington Station, W.2. Dep. £2 2s.

Bulwell, Nottingham.—Telephone Exchange—Erection of, for H.M.O.W. Contracts Dept., King Charles-st., London, S.W.1. Dep. £1 1s.

Hornchurch, Essex.—Houses.—Erection of forty non-parlour type on the south side of Sutton-av., for the U.D.C. F. Alderson, S., Council Offices, Billet-lane, Hornchurch. Dep. £2 2s.

Woking.—Additions.—Also alterations to old fire station at rear of Council offices, for U.D.C. G. J. Wooldridge, S.

OCTOBER 3.

Aberdare.—Employment Exchange.—Erection of, at Aberdare, for the Commissioners of H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

***Barnet.**—Alterations and Extension.—Alterations to the Middle Nurses' Home, and erecting an extension thereto to form a new maternity unit at the Wellhouse Hospital, for the Barnet Union. A. Saxon Snell & Phillips, F.R.I.B.A., 9, Bentinck-st., Manchester-sq., W.1. Dep. £5.

Dublin.—Houses.—66, for Irish Sailors and Soldiers Land Trust. Chief Clerk, 50, Upper Mount-st. Dep. £5 5s.

Durham.—Building.—New police station at Washington, for C.C. C.S., 48, Old Elvet, Durham.

London.—Building Work.—Gate porter's lodge and nurses' home at St. Margaret's Hospital, Leighton-rd., Kentish Town, for the M.A.B. Office of the Board, Embankment, E.C.4. Dep £1.

London.—Cleaning and Painting Works.—At (1) Grove Park Hospital; (2) Goldie Leigh Homes, for the M.A.B. Office of the Board, Victoria-embankment, E.C.4. Dep. £1 in respect of each work.

London and Surrey.—Various Works.—(1) Fire escape staircase at Western Fever Hospital; (2) Alterations, laundry, Southwark Casual Ward; (3) Rearrangement of stores, etc., South-Western Hospital; (4) Glass roof over loading platform, King George V. Sanatorium, for the M.A.B. Office of the Board, Victoria-embankment, E.C.4. Dep. £1 in respect of each work.

***Southampton.**—Houses.—Erection of, 492 on the Burgess-rd. housing site and 84 on the Shirley Warren housing site, for the Corporation. Borough Engineer's Office. Dep. £4 4s. Burgess site, £2 2s. Shirley site, to Borough Treasurer.

Stoke-on-Trent.—Repairs.—To 6 houses at Smallthorne, and 2 houses at Longton, for T.C. E. B. Sharpley, T.C.

Surrey and Herts.—Steel Paling.—Supply and delivery of, at (1) Caterham Mental Hospital, (2) Leavesden Mental Hospital, Abbot's Langley, for the M.A.B. Office of the Board, Victoria Embankment, E.C.4. Dep. £1 in respect of each work.

Whitehall, S.W.—Telephone Exchange.—Erection of, for H.M.O.W. Contracts Dept., King Charles-st., London, S.W.1. Dep. £1 1s.

Woodford.—Building.—Headquarters for section of the 310th Anti-aircraft Searchlight Co., R.E., in Prospect-rd., for Essex Territorial Army Association. G. Shenstone, chartered architect, London, W.C. Dep. £2 2s.

OCTOBER 4.

Holywell.—Houses.—24, at The Meadows, Mostyn, for R.D.C. F. A. Roberts, L.R.I.B.A., architect and surveyor, Earl-chambers, Mold. Dep. £3 3s.

London.—Airing Balconies.—Erection of, at the St. Peter's (Whitechapel) Hospital, for the Guardians of the Parish of Stepney. S. McClelland, Clerk, Administrative Offices, Bancroft-rd., Mile End, E.1. Dep. £1 1s.

London.—Telephone Exchange.—Erection of, at Acton, for the Commissioners, H.M.O.W. Contracts Branch, King Charles-st., Westminster, S.W.1. Dep. £1 1s.

Ramsgate.—Houses.—Erection of 20 non-parlour type houses on the Margate-rd. housing site, for the Corporation. Borough Engineer, Borough Engineer's Office, 16, Albion-place, Ramsgate.

Redruth.—Dwellings.—58 dwellings, with roads and sewers, on site at end of North-st., for U.D.C. G. P. Paige, clerk. Dep. £1 1s.

OCTOBER 5.

Harrow.—Painting, etc.—At the H.M. Stationery Office, Harrow, for the Commissioners, H.M.O.W. Contracts Branch, King Charles-st., Westminster, S.W.1. Dep. £1 1s.

London.—Painting.—At H.M. Stationery Office, Chancery-lane, W.C., for the Commissioners, H.M.O.W. Contracts Branch, King Charles-st., Westminster, S.W.1. Dep. £1 1s.

Wirral.—Heating.—(*a*) Electrical services; (*b*) heating and hot water services, at new nurses' home, at Poor Law Institution, Clatterbridge, Bebington, Birkenhead, for B.G. Finchett, Lancaster & Archer, architects, 13, Houghton-st., Southport. Dep. £2.

OCTOBER 6.

Blackhill.—Painting.—Also colouring following Council schools, for Durham County E.C.:—Blackhall Mill, Blackhill Infants, Waskerley, and Blackhill Handicraft, Office and Committee Room. J. R. W. Sherwood, District Clerk, Education Offices.

OCTOBER 8.

Belfast.—Roof.—Water tower roof at Purdysburn Villa Colony, Saintfield-rd., for Mental Hospital Committee. J. Harper, secretary.

Dublin.—Building.—Monastery at Marino, Dublin, for Christian Brothers. W. H. Byrne & Son, architects, 20, Suffolk-st. Dep. £3 3s.

Stockbridge.—Cottages.—Two cottages in parish of King's Somborne, for R.D.C. H. S. Sawyer, architect, Queen Anne-chambers, Winchester. Dep. £1 1s.

OCTOBER 9.

Barnes.—Cottages.—Pair of semi-detached cottages at electricity sub-station, Ullswater-rd., Ferry-rd., for U.D.C. F. P. Kindell, E. & S. Dep. £5 5s.

Basingstoke.—Telephone Exchange.—Erection of, at Basingstoke, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., Westminster, S.W.1. Dep. £1 1s.

Bradford.—Houses.—240 on Thornton-rd. and Whetley-lane, for T.C. City Architect.

Cork.—Houses.—6 houses at Kinsale, Co. Cork, for Irish Sailors' and Soldiers' Land Trust. R. E. Beckerson, Chief Clerk, 50, Upper Mount-st., Dublin. Dep. £5 5s.

Enfield.—Public Conveniences.—Erection of two, in Ponders End Pleasure Ground, High-st., Ponders End, Middlesex, for the Enfield U.D.C. H. R. Crabb, Engineer and Surveyor, Public Offices, Enfield. Dep. £2 2s.

Hornchurch.—School.—Erection of, for the Essex County Council. Jno. Stuart, F.R.I.B.A., County Architect, Springfield Old Court, Chelmsford. Dep. £2 2s. F. H. Owers, County Accountant, Duke-st., Chelmsford.

Ingleton.—Installation.—Low-pressure hot water at new school, for West Riding E.C. Education Department, County Hall, Wakefield.

Nottingham.—School.—Central school for girls, Gamston-crescent and Perry-rd., Sherwood, for T.C. T. Wallis Gordon, City E. & S. Dep. £2.

Wakefield.—Houses.—24 at Middlestown, 8 at Kirkhamgate, 20 at Sharlston, for R.D.C. Massie & Holdsworth, architects and surveyors, Yorkshire Buildings, Wood-st. Dep. £1 1s.

OCTOBER 10.

Edinburgh.—Exchange.—Telephone exchange at Granton, for H.M.O.W. Architect, H.M. Office of Works, 122, George-st., Edinburgh. Dep. £1 1s.

Kirkburton.—Plastering.—For operating theatre at Storthes Hall Mental Hospital, Kirkburton, near Huddersfield, for West Riding C.C. W. E. H. Burton, architect and engineer, Mental Hospitals Board Offices, Wakefield.

***London.**—Lifts.—Structural alterations to an existing lift well and the provision of a new electric stretcher lift in the maternity wards at St. Andrew's Hospital, Bromley-by-Bow, E.3, for the Poplar Board of Guardians. Harley Heckford, M.Inst.C.E., B.E. and S., Council offices, High Street, E.14. Dep. £2 2s.

Storthes.—Conservatory.—At Storthes Hall Mental Hospital, for West Riding C.C. W. E. H. Burton, architect and engineer, Mental Hospitals Board Offices, Wakefield.

Uckfield.—Post Office and Telephone Exchange.—Erection of, at Uckfield, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., Westminster, S.W.1. Dep. £1 1s.

OCTOBER 11.

Barnsley.—Rebuilding.—Pulling down and rebuilding of Hope Inn, Cliffe Bridge, for Clarkson's Old Brewery (Barnsley), Ltd. Dyson, Cawthorne & Coles, architects and surveyors, 10, Regent-st.

Bootle.—Houses.—154, on land south of Northfield-rd., for C.B. B.E. and S. Dep. £2 2s.

Brighton.—Demolition, Alterations, etc.—Pulling down a tall chimney shaft and carrying out extensive alterations and additions at the Electric Light Station in North-rd., for the Brighton C.B. Wm. H. Overton, F.R.I.B.A., 38 and 39, West-st., Brighton. Dep. £5 5s.

Shorne.—Villa.—Villa at Shorne. B. J. Hammond, L.R.I.B.A., architect, 21, Balmoral-rd., Gillingham.

OCTOBER 12.

Belfast.—Additions.—Also alterations to Malone Public Elementary school, Balmoral-av., for C.B. Education architect, Victoria-st. Dep. £2 2s.

Whitehaven.—Conversion.—Of old infirmary into a central school, for T.C. B.E. & S. Dep. £2 2s.

OCTOBER 13.

Bristol.—Houses.—56, on Fishponds housing site, and three workshops at Sea Mills, Knowle, and Fishponds housing sites, for T.C. L. S. McKenzie, City E. and S., 51, Prince-st. Dep. £1.

Machynlleth.—Reconstruction.—Of existing dam at Council's reservoir at Esgaireira, Llanwrin, and provision of filter plant and erection of filter house, for U.D.C. H. B. Ward, chartered civil engineer, Commerce-chambers, 15, Lord-st., Liverpool. Dep. £3 3s.

Wirral.—Cottages.—Pair of workmen's cottages at Saughall Massie, for R.D.C. S.

OCTOBER 15.

Darlington.—Tower.—Cooling tower with foundations and tank, for Corporation. Borough Electrical Engineer. Dep. £1 1s.

Farnworth.—Painting.—At Electricity Department, for U.D.C. F. Ashton, E. and S. Dep. £2 2s.

Nuneaton.—Houses.—115 on Attleborough (No. 2) housing estate, for T.C. H. N. Jepson, A.R.I.B.A., Queen's-buildings. Dep. £3 3s.

OCTOBER 16.

***Cardiff.**—Painting.—Internal at head post office, for H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

OCTOBER 17.

***Southend-on-Sea.**—Alterations.—To Southend-on-Sea head post office, for the Commissioners, H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

OCTOBER 18.

***London, S.W.**—Employment Exchange.—Erection of, at Walham Green, S.W., for the Commissioners of H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

London, S.W.—Fitter's Shop, Office and Mess Room.—Construction of, at the Stockwell Depot, Stockwell-rd., for the Lambeth Borough Council. Osmond Cattlin, M.Inst.C.E., B.E., Town Hall, Brixton-hill, S.W.2.

***Willesden.**—New Branch Library.—Erection of, at Olive-rd., Cricklewood, for the Dist. Council. F. Wilkinson, M.Inst.C.E., Engineer to the Council, Town Hall, Dyne-rd., Kilburn, N.W.6. Dep. £2 2s.

Worcester.—Extensions.—Of goods shed, etc., at Shrub Hill Station, for the Directors of the Great Western Railway Co. Office of the Engineer at this station. Dep. £2 2s.

OCTOBER 19.

***Falmouth.**—New Post Office and Telephone Exchange.—Erection of, at Falmouth, for the Commissioners of H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

Hertford.—Tower.—New water tower, for T.C. B.S. and E. Dep. £10 10s.

OCTOBER 20.

***Reading.**—Flats.—Erection of 18 in Silver-st., Reading, for the Housing and Town Planning Committee of Reading. Housing Architect, Municipal Buildings, St. Lawrence's Churchyard. Dep. £2 2s.

OCTOBER 22.

***Greenwich.**—Reinforced concrete lining of coal bunkers.—At the Greenwich Power Station for the L.C.C. General Manager of Tramways, Tramway Offices, Victoria Embankment. Dep. £2 by cheque or draft to the order of the L.C.C.

***London, S.E.**—Various Works.—Alterations and additions to and the conversion of Block "C" of the Lewisham Hospital to form receiving and casualty wards and out-patients' dept., for the Guardians of the Lewisham Union. W. R. Owen, Clerk to the Guardians, Guardians' Offices, 394, High-st., Lewisham, S.E.13. Dep. £5 5s.

OCTOBER 24.

***London.**—Painting and Other Works.—To the interior of the dining hall at St. Leonard's House, 213, Kingsland-rd., E.2, for the Guardians, parish of St. Leonard, Shoreditch. F. Danby Smith, F.R.I.B.A., Parliament-mansions, S.W.1. Dep. £2

OCTOBER 27.

Stoke and Wolstanton. — Chimney. — Chimney-stack 175 ft. high, 5 ft. 6 in. internal diameter, on a prepared site at London-rd. Institution, near Newcastle, Staffs, for B.G. T. Wood, clerk, Union Offices, Stoke-upon-Trent. Dep. £1.

OCTOBER 29.

***Enfield.**—Extensions.—Building of two extensions to the Hospital at World's End, Winchmore Hill, for the Enfield and Edmonton Joint Hospital Board. H. R. Crabb, A.R.I.B.A.

OCTOBER 30.

Devon.—Buildings.—Erection of show yard, grand stand, cattle, implements and other sheddings, etc., at South Molton, for the Devon County Agricultural Assn. Percy Whitton, Sec., 20, Queen-st., Exeter.

NO DATE.

Alva.—Pavilion.—In Cochrane Park. J. Melvin and Son, architects, Mar-st., Alloa.

Athenry.—Building.—New wing at Presentation Convent, Athenry, County Galway. R. M. Butler, F.R.I.B.A., architect, 23, Kildare-st., Dublin.

Bacup.—Painting.—Outside, 30 houses. Greenhalgh, 13, Venture-st.

Bacup.—Painting.—Also repairing 19 houses in South-st. W. Greaves, Ltd., South-st. works.

Bilbrough.—Alterations.—Also repairs at head teacher's house, etc., at Council school, for West Riding E.C. W. Hague, Education Office, Finkle-st., Selby.

Burnley.—Lake.—Boating lake and other work in connection with the lay-out of land at Bank Hall, for C.B. B.E. & S.

Carlisle.—Additions.—Also alterations to maids' quarters, at Cumberland Infirmary, for Committee. J. Burnet, Son & Dick, architects, 238, St. Vincent-st., Glasgow. Dep. £2 2s.

***London Suburb.**—Houses.—Building Contractors required to erect 300 to 400 houses. Building finance provided. G. H. B., 15, Victoria-st., S.W.

MATERIALS, etc.

OCTOBER 1.

Egham.—Highway Materials, etc.—R. I. Weymouth. E. and S.

Hebburn.—Highway Materials.—For U.D.C. H. Paterson, S.

OCTOBER 3.

Bromley.—Slag.—1,000 tons tarred slag or granite macadam, for R.D.C. L. O. Wall, clerk.

Burnham-on-Sea.—Road Materials.—For U.D.C. Wm. H. Chowins, S.

OCTOBER 6.

Edinburgh.—Highways Materials, etc.—For Corporation. City Road S.

OCTOBER 9.

London.—Builder's Materials, etc.—For G.W.R. F. R. E. Davis, secretary, Paddington Station, W.2.

OCTOBER 15.

London.—Lead.—For Bombay, Baroda and Central India Rly. Co. S. G. S. Young, secretary, White Mansions, 91, Petty France, S.W.1.

OCTOBER 22.

Hertford.—Highway Materials.—For T.C. B.E. and S.

NO DATE.

Newton Abbot.—Pipes.—10 tons of 6-in. and about 10 tons of 9-in. new or second-hand cast-iron pipes, for R.D.C. S. Olver, Highway Surveyor, 9, Marlborough-ter., Bovey Tracey.

ENGINEERING, IRON AND STEEL.

OCTOBER 1.

Copenhagen.—Bridge.—Highway and railway bridge across Lillebelt, for Danish State Railways. Chief of Department of Way and Works, Copenhagen or Danish Legation, London.

Hull.—Foundations.—Abutments, foundations, and piling of a new opening bridge to be erected at point where new Paull-rd. crosses the Hedon Haven, for T.C. T. Thomas, City E. Dep. £1 1s.

Paul.—Mains.—A well, tank, gravitation and distributing mains, etc., at Mousehole Water Trevithal Supply, for U.D.C. Lewis & Lewis, engineers, 15 Victoria-st., S.W.1.

OCTOBER 3.

Hendon.—Culverts.—Surface water culverts at Uxbridge-rd., Woodridings, Pinner, comprising 453 yds. lin. of 54-in. concrete tubes, 126 yds. lin. 30-in. manholes, concrete tubes, etc., for R.D.C. H. W. Rackham, E. & S. Dep. £3 3s.

OCTOBER 6.

Wincanton.—Water Supply.—Supplying and laying of about 5,016 yds. of 6-in. cast-iron main and other works incidental thereto, for R.D.C. H. D. Hindley, engineer, Bourton, Dorset.

OCTOBER 11.

Brighton. — Constructional Steelwork. — Erection of, in connection with alterations to the Electric Light Station in North-rd., Brighton, for the Brighton C.B. Wm. H. Overton, F.R.I.B.A., 38 and 39, West-st., Brighton. Dep. £5 5s.

OCTOBER 12.

Blaby.—Sewerage.—3,000 yds. of 6 in., 7 in., 9 in. and 12 in. stoneware pipe sewers, together with manholes, and of pumping station, and rising main and sewage purification works, in Parish of Countesthorpe, for R.D.C. Pick, Everard, Keay & Gimson, engineers, 6, Millstone-lane, Leicester. Dep. £1 1s.

OCTOBER 16.

Godstone.—Drainage.—Detritus tanks, settlement tanks, filter beds, humus tanks, sludge beds, storm tank and lines of pipes, and for making alterations to existing works at sewage treatment works, about 1 mile from Hurst Green Halt, for R.D.C. John Taylor & Sons, engineers, Caxton House, Westminster, S.W.1. Dep. £5.

OCTOBER 18.

Cape Town.—Bridgework.—Structural bridgework, for South African Railways and Harbours. Department of Overseas Trade, 35, Old Queen-st., S.W.1. (Ref. A.X. 6816.)

OCTOBER 25.

Johannesburg.—Steelwork.—For South African Railways and Harbours Committee. Department of Overseas Trade, 35, Old Queen-st., S.W.1. (Ref. A.X. 6752.)

NOVEMBER 12.

Australia.—Steelwork.—Steel chimneys and dust eliminators, for Yallourn Power Station, for State Electricity Commission of Victoria. W. J. Price, acting secretary, 22-32, William-st., Melbourne, Australia.

NO DATE.

Shipton.—Reconstruction.—Of Bellinger Bridge, for Southampton C.C. W. J. Taylor, C.S., The Castle, Winchester. Dep. £1 1s.

ROAD, SEWERAGE, AND WATER WORKS

OCTOBER 1.

Chelmsford.—Excavating.—Of trenches, 1,200 yds. in length, for extension of 3-in. water main, Brockhill, Runwell, for R.D.C. J. Dewhirst, S. Waterloo-lane.

Hendon.—Making-up.—Of Sydney-grove, Burroughs-gardens, for U.D.C. Plans and specification may be seen A. O. Knight, E. & S. Dep. £3.

London.—Paving.—Wood block paving on reinforced concrete foundations, etc., in Commercial-rd., Peckham, S.E.15, for Camberwell B.C. W. Bell, B.E. and S.

Macclesfield.—Sewers.—Laying and construction of 900 yds. or thereabouts of 6 in. and 9 in. glazed socketed earthenware pipes, together with all necessary manholes, etc., at Chester-rd., Woodford, near Stockport, for R.D.C. G. Clayton, S Dep. £1 1s.

OCTOBER 2.

Hornchurch.—Sewers.—Laying 288 lin. yds. of soil and surface water sewers of 9-in. best stoneware pipes, the construction of six manholes and other incidental works, in new road off Suttons-av., for U.D.C. F. Alderson, S.

OCTOBER 3.

Atherton.—Ballast.—600 tons of hard rock ballast, suitable for ballasting 8 in. thick on new roads, for U.D.C. F. L. Boydell, S.

Birmingham.—Reconstruction.—Of Hockley Hill, for T.C. H. H. Humphries, City E. & S. Dep. £2.

Formby.—Sewer.—6 in. sewer in Queen's-av., and making-up road in concrete, for U.D.C. E. K. Gollan, E. & S.

London.—Road Repairs.—(1) At Goldie Leigh Homes; and (2) Grove Park Hospital, for the M.A.B. Office of the Board, Victoria-embankment, E.C.4. Dep. £1 in respect of each work.

Rathdown.—Sewer.—At Ballinteer-rd., Dundrum, for No. 1 R.D.C. L. H. McCarthy, B.E., 26, Lower Leeson-st., Dublin. Dep. £3 3s.

Wembley. — Making-up. — Of Clarendon-gardens (3rd part), approx. length 325 yds., and Greystone-gardens, approx. length 300 yds., for U.D.C. C. R. W. Chapman, E. & S. Dep. £1 1s. each.

OCTOBER 4.

Havant.—Sewer.—Laying 230 yards of 9 in. stoneware sewer, together with manholes, etc., at Hulbert-rd.. Bedhampton, for R.D.C. S. Dep. £2 2s.

Leeds.—Paving.—Kerbing, tar paving and flagging of footpaths and tar macadamising carriageway in Abbey-mount, Wheater-st., Broomfield-cres., Victoria Park-av., Church Wood-mount, Roper-grove, also tar paving footpaths in Cragside-cres., on the Hawksworth Wood housing estate, for T.C. E. W. Cockerlyne, Highways Engineer. Dep. £1 1s.

Malden.—Paving.—Also kerbing footway on north side of High-st., on west side of Causeway, and on east side of Fullbridge, for T.C. T. R. Swales, B.E.

OCTOBER 5.

Irlam.—Paving.—Also flagging works at Liverpool-rd., Cadishead, between Lords'-st. and the Wesleyan Chapel, for U.D.C. E. & S.

London.—Paving.—Of Pendennis-rd., Woodmansterne-cres. and Churchmore-rd., Streatham; Viewfield-rd., Southfield, and Birchlands-av., Balham, for Wandsworth B.C. E. J. Elford, B.E., 215, Balham High-rd., S.W.17.

Southampton.—Sewers.—Roads and sewers on housing site at Shirley Warren, for C.B. B.E., 33-35, French-st. Dep. £1 1s.

Watford.—Main.—Construction of an 18 in. cast-iron rising main, approximately 1,120 yds. in length, together with certain distributing mains and chambers, for T.C. W. W. Newman, B.E. Dep. £2 2s.

OCTOBER 6.

Haddington.—Setts.—Supplying and laying of Whinstone Causeway setts and relative works in various streets over an approximate area of 7,000 yds. super, for T.C. Wm. Lee Hogg, B.S. Dep. £1 1s.

OCTOBER 8.

Glasgow.—Extension.—Of Aikenhead-rd. and diversion of Menock-rd., for Corporation. D. Stenhouse, T.C.

OCTOBER 9.

Crewe.—Making-up.—Also sewering of back passage running from passage rear of Middlewich-st. to Sefton-av., being approximately 600 lin. yds. in length, for T.C. E. G. Timbrell, B.E. & S. Dep. £2 2s.

Southend-on-Sea.—Sewerage.—Supplying and laying of about four miles of 9 in. cast-iron pipe sludge main, together with valves, etc., and sundry concrete and earthworks on sludge lands in Parish of Barling, for C.B. Dodd & Watson, engineers, County-chambers, Corporation-st., Birmingham. Dep. £2.

Southgate. — Making-up. — Of Woodland-way, Hawthorn-av., Grenoble-gardens (section No. 2), Upsdell-av. (section No. 2), Berkshire-gardens (section No. 2), Lytton-av., for U.D.C. R. Phillips, S. Dep. £2.

OCTOBER 10.

Guildford.—Improvements.—Of Old Palace-rd., for T.C. J. W. Hipwood, B.E.

Swansea.—Paving.—Supplying and laying about 42,000 sq. yds. of asphalt paving on carriageways and footways within the borough, for C.B. J. Richard Heath, B.E. & S.

OCTOBER 11.

Guildford.—Making-up.—Of Weston-rd. and Parkhurst-rd., for T.C. J. W. Hipwood, B.E. Dep. £1 1s.

OCTOBER 12.

Kingsbury. — Making-up. — Of Chalkhill-rd., approx. length 1,000 yds., and Barnhill-rd., approx. length 600 yds., for U.D.C. R. C. N. Newport. Dep. £3 3s.

OCTOBER 16.

Leicester.—Footways.—Completion of footways and carriageways on Braunstone, Section 2, for T.C. J. S. Fyfe, A.R.I.B.A., Housing Architect, Wyggeston House, 18, Highcross-st. Dep. £2 2s.

Tottenham.—Making-up.—Also surface water drainage of Downhills Park-rd., from Cambridge Arterial-rd. to Water Tower, for U.D.C. E. Dep. 10s. 6d.

OCTOBER 19.

Hertford.—Mains.—Supplying and laying of approximately 2,300 yds. of 10-in., 8-in. and 6-in. internal diameter water mains and other works connected therewith, together with 10-ft. road and 9-in. overflow drain from the New Water Tower, for T.C. B.E. and S. Dep. £5 5s.

Auction Sales Tenders, etc.

OCTOBER 1.

Blackburn.—Edward Rushton, Son & Kenyon will sell on the premises, Queen Brick Works, Rishton, near Blackburn, the leasehold interest in the land and buildings, together with plant and machinery. Auctioneers, 13, Norfolk-st., Manchester.

***Rishton.**—Edward Rushton, Son, & Kenyon will sell, re Queen Brick Co. (1925), Ltd., by Order of the Receiver for Debenture-holders, Leasehold Interest in the Land and Buildings forming the Queen Brick Works at Rishton, together with Plant and Machinery. Auctioneers, 13, Norfolk-street, Manchester.

OCTOBER 2 and 3.

London.—Joseph Hibbard & Sons will sell first portion, without reserve, on premises of Electric Saw Mills, Victoria Park, E.9, at 1 o'clock each day, stock of hardwoods. Auctioneers, 15, Newington Green, Islington, N.16.

OCTOBER 8 and 9.

***Loughton.**—Protheroe & Morris will sell at the Forest Nurseries, Loughton, Third Annual Sale of Roses, Fruit Trees, Shrubs, etc. Auctioneers, 67 and 68, Cheapside, E.C.2.

OCTOBER 9.

***London, N.**—Joseph Hibbard & Sons will sell, without reserve, by Order of the Owners, removed for convenience of sale at their sale room, 15, Newington Green, Islington, N.16, Stock of Timber and Doors. Auctioneers as above.

OCTOBER 11.

***Kingston-on-Thames.** — Nightingale, Page & Bennett amalgamated with White & Sons (Dorking), will sell at The Sun Hotel, Kingston-on-Thames (unless previously sold), business site and premises, 29-35, High-st. Auctioneers, Eagle-chambers, Kingston-on-Thames.

OCTOBER 16.

London.—Hampton & Sons will sell by Order of Executors, Freehold Building Estate known as the Grove House Estate, Chiswick. Auctioneers, 20, St. James'-square, S.W.1.

OCTOBER 16.

Oldbury.—Joseph Hibbard & Sons will sell without reserve, by order of Messrs. T. & E. Lowe, Ltd., at the saw mills, Rood End-rd., Oldbury, near Birmingham, saw mill plant and English timber. Auctioneers, 15, Newington-green, Islington, N.16.

Pinner.—Hampton & Sons will sell (unless previously sold) freehold property, "The Hall" Estate, Pinner. Auctioneers, 20, St. James'-square, S.W.1.

NO DATE.

***Pontllanfraith, Monmouth.**—Concrete plant, Machinery, etc., for sale by tender. Apply Mynyislwyn U.D.C., Geo. Wishart, E. and S., Council Offices, Pontllanfraith, Mon.

Public Appointments

OCTOBER 3.

Chelmsford.—Architectural Assistant. (Temp.) required by the Essex County Council. Jno. Stuart, F.R.I.B.A., County Architect, Springfield Old Court, Chelmsford.

OCTOBER 5.

London.—Drainage Surveyor required in the Borough Engineer and Surveyor's Department, by the Royal Borough of Kensington. Town Clerk, Town Hall, Kensington, W.8.

OCTOBER 6.

London.—(1) Head of Evening Building Dept., (2) Head of Evening Architecture Dept., required by the L.C.C. School of Building, Ferndale-rd., Brixton, S.W.4. Education Officer (T.1a), The County Hall, Westminster Bridge, S.E.1. Foolscap addressed envelope necessary.

NO DATE.

***Nigeria.**—Foreman of Works (building) required by the Government of Nigeria for the Public Works Dept. for two tours, each of 12 to 18 months' service, with possible extension. Apply at once. Crown Agents for the Colonies, 4, Millbank, Westminster, S.W., quoting M/1055.

***Palestine.**—Quantity Surveyor required by the Government of Palestine in the Public Works Dept., for three years' service, with possible extension. Apply at once by letter, Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/897.

CONTRACTS PLACED

Felixstowe.—BANK.—The Westminster Bank, Ltd., have placed the contract for their new branch bank in High-street with Messrs. J. Costling & Son, Walton Works, Felixstowe. Plans have been prepared by Mr. H. Munro Cautley, F.R.I.B.A., The Thoroughfare, Ipswich.

Harrow Weald.—SHOPS.—A block of eight shops is to be built on a site at the corner of High-road and Whitefriars-drive. The builders will be Messrs. H. B. Silver, Ltd., 61, Station-road, Wealdstone.

High Barnet.—REBUILDING.—The "Lord Nelson" public-house is to be rebuilt, a contract having been awarded to Messrs. Henry Brown, of Watford. The architects are Messrs. William Bradford & Son, 12, Regent-street, S.W.1.

Kidderminster.—SHOPS.—The Kidderminster Industrial Co-operative Society, Ltd., have decided to build new shops and show rooms on a site in Worcester-street. The contract has been placed with Messrs. Lacy Bros., Adam-street, Kidderminster, the cost being about £4,000. The architects are Messrs. Pritchard & Godwin, Bank-chambers.

Southall.—REBUILDING.—A contract has been placed for the rebuilding of the "Beehive" public-house, the builders being Messrs. Douglass Halse & Co., Ltd., 24, Greens End, Woolwich, S.E.18. The new building has been designed by Messrs. William Bradford & Son, 12, Regent-street, S.W.1.

PATENTS

APPLICATIONS PUBLISHED.*

288,828.—A. Sloan: Draught and weather excluders.

288,867.—A. Feist and F. L. Kopp: Process for manufacturing in the cold state tiles for walls and slabs for floors.

288,896.—J. S. Cowper: Rubber paving-blocks and setts.

288,903.—E. C. Palm and H. T. Thorsson: Cement compositions.

288,916.—A. L. Turner and H. O. Turner: Fireplaces and surrounds.

288,936.—Tonks & Sons, Ltd., and C. W. Tonks: Means for dead-locking mortise latches and locks.

288,941.—S. Lucca: Pipe coupling.

289,131.—T. Beattie: Process of cement decoration for buildings.

289,132.—W. S. Eyre and D. Whitaker: Mixing machines for concrete.

*** All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.**

PROPOSED NEW BUILDINGS & OTHER WORKS*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians, B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B. of E. for Board of Education, M.A.B. for Metropolitan Asylums Board; and M.W.B. for Metropolitan Water Board; Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

Ballycastle.—Antrim C.C. acceded to request from North Antrim Regional Committee for a loan of £10,000 for building and equipping Ballycastle Technical school.

Barnes.—U.D.C. passed plans:—9 shops with three flats over, and 59 lock-up garages on site of 282, Upper Richmond-rd., by Murrell & Pigott; 4 houses, Suffolk-rd., by E. A. Broughton.

Barnoldswick.—In connection with erection of new church of St. Mary le Gill, plans been prepared by R. Martin, diocesan surveyor, of 90, Deansgate, Manchester. Scheme is estimated to cost £27,000.

Barnsley.—B.E. submitted alternative plans and estimates of cost of three story and four story building on Corn Exchange site, and Markets Committee recommended that four story building be erected at £8,940, exclusive of fixtures for the shop fronts, and that Borough Engineer be authorised to carry out the work through his own department. The Committee further recommended that application be made to the M.H. for sanction to loan for £8,940 in respect of carrying out work. Council recommended that Town Clerk be authorised to prepare necessary contracts and applications be made to M.H. for sanction to borrow £45,170 for erection of 150 houses.

Bedford.—T.C. passed plans:—E. H. C. Inskip for St. Cuthbert's Parish Church Council, new cloak room and w.c., St. Cuthbert's Hall; Usher & Anthony for J. E. Page, Ltd., additions to offices, St. Mary's-st.

Billingham.—Plans being prepared by Archibald & Kitching, F. & L.R.I.B.A., 21, Albert-rd., Middlesbrough, for rebuilding Smith's Arms Hotel, for J. W. Cameron & Co., Ltd., Lion Brewery, West Hartlepool.

Birkenhead.—A. E. Shennan, F.R.I.B.A., architect, 14, North John-st., Liverpool, prepared plans for rebuilding premises in Hamilton-st., for Westminster Bank, Ltd.

Blackpool.—R. B. Mather, Son & Wilding, 34, Birley-st., are architects for Conservative club at Layton.

Blyth.—T.C. seeking sanction to borrow £10,000 for extending promenade and sea wall a further 240 yards.

Bolton.—Management of Y.M.C.A. decided to erect lecture hall, to be called the "Jackson Memorial Hall."

Bradford.—Old Japanese idea of collapsible house is to be applied to municipal shops included in £210,000 Bradford Central Area scheme; Corporation Street Improvement and Buildings' Committee passed final plans as presented by City Architect, W. Williamson.

Bradford.—Street Improvement and Buildings Committee approved plans for erection of six lock-up shops on cleared site in Barkerend-rd., extending from East-parade to Wellington Hotel.

Burton Latimer.—U.D.C. decided to build a further 20 houses.

Cambridge.—Plans passed for 2 pairs of semi-detached houses, Green End-rd., H. Williams, 9, Victoria Park.

Chester.—Suggestion that bridge be provided between Mill-st. and the Meadows over the Weir, near T. Nicholls & Co.'s mills, been approved by T.C., and City Surveyor been instructed to prepare and submit plans and estimates.—Part of old boiler house, at New Crane-st., station, is to be converted to garage for accommodation of certain of motor vehicles of Electricity Department, at £130.—Formal sanction been received from M.H. to borrowing of £7,187 for erection of shops and houses at Handbridge.—City Surveyor is to carry out, by direct labour, external painting of 114 houses on Buddicom Park estate, at £838.—M.H. approved tender for erection of 116 houses on Eaton-rd. estate, and submitted formal sanction to borrowing £43,952.

Coalville.—Rev. Joseph Degen and congregation of St. Saviour's, Highfield-st., collecting funds for church.

Croydon.—C.B. received sanction to borrowing from M.H. the following:—£34,800 and £1,200, erection of 98 dwellings on Mitcham-rd. estate (second section); £27,600 and £850, erection of 70 dwellings on Hermitage-rd. estate; £1,950; additions to Frith-rd. conveniences,; £1,317 sanitary conveniences, Crystal Palace-parade; and £48,430, erection of 128 dwellings on Mitcham-rd. estate (fourth section).—Plans passed:—P. Richardson, 136, Addiscombe-rd., 2 houses, garages and washhouses, Bandy Mount-rd.; S. H. Laver, London-rd., S.W.16, 12 garages, Pollards Hill South; Thomas & Sons, Bramley-av., Coulsdon, 12 houses, St. Oswald's-rd.; London & Suburban Land & Building Co., Ltd., 4, Lincoln's Inn Fields, W.C., 12 houses, Malden-av.; R. Costain & Sons, Ltd., Fitzalan House, Arundel-st., W.C.2, 4 garages, 17, 19, 21 & 23, Croham Valley-rd.; Wallis & Co., 184, Frant-rd., 16 garages, Bert-rd.; Morgan, Baines & Clark, Wallington, 6 houses and garages, Mount Park-av.; A. Duckit, 2 Fairlands-av., amended block plan 8 houses, Grove-rd., and 12 Grove-rd.; Paish, Tyler & Crump, East Croydon, 53 houses, Barnfield-av., W. T. Cripps, Estate Office, South-rd., Preston, Sussex, 8 flats and 26 garages, Oakhill-rd.; P. Richardson, 62, High-st., 22 houses, Homer-rd., The Glade; Carter Paterson & Co., 128, Goswell-rd., E.C.1, loading bank, covered yard & shops with flats over, Purley Way; Paish, Tyler & Crump, East Croydon, 11 houses Eldon-av., 2 houses Orchard-av., and 8 houses Shirley-rd.; Borough Electrical Engineer, sub-station, Lancaster-rd.; L. A. Aston, 7, Pollards Hill South, 16 garages, Pollards Hill South; C. W. Marchant, 2, Sandfield-rd., 2 shops with rooms over, 57-59, Bensham-grove; Steel & Howes, Farnley-rd., 26 houses, Lonsdale and Archer-rds.; Smith & Sons (Norwood), Ltd., Junction Works, S.E.25, 9 garages, rear of Anthony-rd.; H. Macintosh, East Croydon, 8 houses and 2 garages, Briar-av.; Mrs. A. Clark, 1,262, London-rd., dance hall additions, London-rd.; F. W. Rees & Partners, 44, Park-lane, 6 garages, Bensham-lane; R. Pierson, 47, Wakehurst-rd., S.W.11, 4 houses, 51-57 (odd), Springfield-rd.; P. Richardson, 62, High-st., 5 garages, 4, 8, 12, 16 and 20, Nursery-close; H. & D. Winn, Grange-gardens, S.E.25, 4 houses and garages, Grange-gardens; P. Richardson, 15 houses, Beckford-rd. P. Richardson, 6 houses, Wrights-rd.; F. S. & A. Woods, Croham Valley-rd., 6 houses, Crest-rd.

Darlaston.—Rev. J. J. Budgen, of St. Joseph's Church, acquired site known as Stanton Lodge and grounds for Church and Presbytery. Plans by Sandy & Norris, A.R.I.B.A., architects, 22, Greengate, Stafford. Accommodation will be for 600. No contracts have been placed.

Dublin.—City Commissioners leased to Saorstat Civil Service Public Utility Society plot of ground on Griffith-av., where 19 houses are to be built at £1,000 each.

Dundee.—Improvements are to be made to "Her Majesty's" cinema at Seagate. Architect is G. A. Boswell, West George-st., Glasgow.

Durham.—New miners' welfare institute to cost about £6,000 is to be erected at South Pelaw. Plans by Cowe & Lawson, architects, Chester-le-Street.

East Barnet.—U.D.C. passed plans:—Seven lock-up garages in Leicester-rd., for R. H. Beare; two lock-up garages in Cedar-av., at rear of Priscilladene; seven garages in Lytton-rd., for R. H. Shears; four lock-up garages at rear of the Clock House-parade, for H. E. Percy.

Edmonton.—U.D.C. recommend that application be made to M.H. for sanction to loan of £2,910 for the purchase of a motor ambulance and hose hoist, and for the construction of garage accommodation and drill yard, etc., at the fire station.—Plans passed:—Stanley Parkes & Brown, 12 houses and garages in Church-st.; C. W. Dennis, warehouse and office in Chichester-rd.; J. Briscoe, garage and storeroom at Mentmore, Village-rd.; A. Christmas, 3 garages between 7 and 25, Queen's-rd.; London Co-operative Society, for stables at society's depot at Oakthorne estate; A. Jones, 6 houses, Solna-rd.; I. C. Mummery, new operating theatre at North Middlesex Hospital; H. J. Barley, 9 houses in Silver-st.

Frodsham.—R.D.C. propose to erect a further 18 to 20 houses on allotment field facing Gelebe-terrace.

Gorleston-on-Sea.—Alterations and additions, including winter garden, are to be made to the Pier Hotel. Plans by A. J. Eccleston, surveyor to E. Lacon & Co., brewers, Great Yarmouth.

Heaton.—Stienlet & Maxwell, L. & F.R.I.B.A., 5, Saville-chambers, Newcastle-on-Tyne, been appointed architects for new elementary schools, for Rev. J. McCormack.

Hemsworth.—Proposed new site for new infirmary block and nurses' home has been approved and W. T. Lynam's plans are to be submitted to M.H.

Holyhead.—U.D.C. passed plans:—Three houses in Walthew-av., for S. B. Mackay; six houses in Min-y-Mor-rd., for Owen Jones.

Howth.—A sum of £511 is to be spent by U.D.C. on making Claremont Strand suitable for public bathing place.

Ilfracombe.—U.D.C. received communication from M.H. sanctioning borrowing of £525 for Council's housing scheme.

Jarrow.—T.C. is seeking sanction to borrow £12,470 for erection of 32 houses by direct labour.

Kirkhamgate.—Wakefield R.D.C. propose to erect 8 houses.

Letchworth.—U.D.C. approved erection of 100 non-parlour type houses on site on north of Icknield Way West.

Liverpool.—Office premises to be erected for Royal Exchange Assurance Co. on a site in Exchange-st. East. Willink & Dodd, architects, of Cunard-buildings.

*** See also our List of Contracts, Competitions, etc.**

London (Lewisham).—B.C. passed plans:—J. G. Stephenson (for L.C.C.), Downham estate, 46 houses; and school north side of Pendragon-rd.

Lowestoft.—T.C. passed plans:—Alliance Artificial Silk, Ltd., for factory, School-rd.; Trustees St. George's Mission Hall, for additional classroom, rear of St. George's Hall, St. George's-rd.

Manchester.—Corporation Housing Committee accepted eight tenders for erection of 1,104 houses on Barlow Moor-rd. estate.

Margate.—T.C. decided to sell plots of building land in College-rd. to Wood & Hopcraft, for £2,000, for erection of houses.

Middlestown.—Tenders are to be invited for 24 houses, for R.D.C.

Nelson.—R. Jaques, A.R.I.B.A., architect, 37, Railway-st., has prepared lay-out plan for development of Reedley estate for residential purposes.

New Barnet.—Plans being completed for rebuilding of "King's Head" public-house at Cat's Hill. Architects, William Bradford & Son, 12, Regent-st., S.W.1.

Newcastle-upon-Tyne.—City Council accepted tenders for erection of 270 houses on Two Ball Lonnen estate and 20 at Fenham—at £103,498.

Nottingham.—Sir Louis Pearson, of Beeston, Nottinghamshire, has given £5,000 for a new operating theatre at Nottingham General Hospital.

Oldham.—Plans been prepared by Waterworks Engineer for filter house, chemical house and power house in connection with the Longden End filter works.—Board of Management of Royal Infirmary decided to go forward with scheme for extensions to institution. Plans by Taylor & Simister, L. & F.R.I.B.A., 29, Queen's-st., Manchester. Extension will provide accommodation for about 34 beds. Estimated cost is £6,700.

Orford.—Congregation of Parish Church raising funds for parochial hall and school extensions, which is estimated to cost about £3,000. Architect, A. Warburton, A.R.I.B.A., 2, Bold-st., Warrington.

Preston.—J. O. Harris, L.R.I.B.A., architect, 4, Camden-place, prepared plans for church at Penwortham, for Congregational Union.

Richmond (Surrey).—T.C. passed plans:—B. Pite, additions to Holy Trinity Church; Jarman & Co., 3 garages, Spring Grove House, Queen's-rd.; R. Gibson, 144 flats and 50 garages, Gloucester House Estate, Kew-rd.

Rochdale.—R. Hurst & Co., wine merchants, Baillie-st., proposing to make improvements to Grapes Hotel, Baillie-st.

Royston.—U.D.C. passed plans:—New vestry at Church; conversion of Lloyds old bank on Market Hill into dwelling house; and a new house in Eastfield-rd. for Melville.

St. Asaph.—B.G. and R.D.C. decided on new boardroom at £3,800 at St. Asaph Institution.

Southend.—Corporation agreed to build £20,000 bandstand.

Southport.—The Board of Management of Infirmary, Scarisbrick New-rd., are proposing to make additions and alterations to buildings and to erect a new nurses' home. Mr. N. Jones, F.R.I.B.A., 329, Lord-st., is to prepare scheme.

South Shields.—Additions to drapery premises in King-st. Architect is Mr. Newby, 37, King-st.

Stoke.—Governors of North Staffordshire Technical College are considering question of building extensions at college at Stoke.

Swansea.—New office premises in St. Helens-rd. Plans by H. A. Ellis, F.R.I.B.A., architect, 40, Castle-st.—Extensions to Westbury-st. works of W. E. Fuller & Co. Architect, S. Croker, Portland-st.

Tadcaster.—Airedale Collieries, Ltd., propose to carry out extensions to offices.—B.G. decided to proceed with extensions to infirmary, at £1,000.

Thornby.—T.C. passed plans:—3 terraced houses in Falkirk-st., Moorhouse & Barker; also a pair of semi-detached houses in Northumberland-rd.

Uppingham.—Housing architect prepared plans for the houses at Seaton and wing for R.D.C.

Urmston.—Messrs. Lewis's, Ltd., drapers, etc., Market-st., Manchester, secured site off Moss-lane, for large warehouse. Plans by G. W. Beaumont & Sons, F.R.I.B.A., architects, 24, Brazennose-st., Manchester.

York.—St. John's Training College, York, approved scheme of alterations and additions to existing buildings, estimated to cost £10,000.

Wakefield.—B.G. decided to carry out alterations and additions to Regent-st. children's homes.

Wallsend.—T.C. approved plans for extensions to premises of Co-operative Laundries, Equitable-st.

Welbeck.—A garden fete been held, the proceeds of which are to be devotd to fund for proposed erection of a church at Welbeck Colliery.

Westerham.—Branch of British Legion are building new headquarters at £600.

Wincanton.—Plans been prepared by R. Kitching Ellison, A.R.I.B.A., 5, York-buildings, Adelphi, W.C., for additions, alterations and renovations at Stavordale Priory.

Worthing.—Rev. A. Edwyn Butler, "Holdenhurst," Salisbury-rd., and Wesleyan Authorities, acquired site which has frontages to South Farm-rd. and Poutlers-lane, Broadwater, where they propose to erect Wesleyan Church. Plans by Richardson & Gill, FF.R.I.B.A., 41, Russell-sq., London, W.C.1.

Wrotham.—U.D.C. sanctioned plans for hall in Western-rd., next to Post Office, for S. Kitney.

FIRE.

Stamford.—Central and east wings of Cottesmore Hall, near Oakham, Rutland, been destroyed by fire. Damage is estimated at about £25,000.

NEW CINEMAS

Bradford City Council has passed plans for a new super cinema at Eccleshill, Bradford, for the Provincial Cinema Theatres, Ltd. The company's architect is Mr. W. E. Trent, 123, Regent-street, W.1.

Plans for a new cinema at Lurgan, Ireland, have been passed by the Town Council. Construction is to be commenced at once.

Mr. E. A. Stone, F.S.I., 20, Berkeley-street, W., is the architect for the new "atmospheric" super cinema, to hold 3,000, which is to be built at once in Streatham.

Messrs. Hallett, of Stockport, are the contractors for the new cinema in Bury New-road, Prestwich, which is to be erected at a cost of £40,000. Work has been commenced.

A new "atmospheric" cinema theatre is to be erected in Wood Green for Mr. E. Carreras. The cinema, which will hold 3,000 persons, has been designed by Mr. W. J. King, 5, Great Dane-street, W.C.1.

Mr. G. E. Tonge, L.R.I.B.A., architect, of Hill-street, Southport, has prepared plans for the erection of a new cinema at Burnage-lane, Burnage, Manchester. Plans have been approved by the Corporation.

A site at Standishgate, Wigan, has been acquired by the Savoy Cinemas (Northern), Ltd., for a new cinema. No architect has yet been appointed and we learn that a limited competition for architects accustomed to cinema design may be held.

Mr. J. Fairweather, F.R.I.B.A., Trongate, Glasgow, is the architect for the new "Playhouse" cinema to be erected in Edinburgh to accommodate 3,000 people. The building contract has been awarded to Messrs. Bruce and Sons, of Edinburgh.

Sanction has been given to Mr. Leon Salberg to build a new picture theatre on a site in Aston High-street. The plans have been prepared by Messrs. Satchwell & Roberts, Waterloo-street, Birmingham.

TRADE NEWS

Travelling Radiator Exhibit.

The motor travelling caravan, fitted with a working "Ideal Cookanheat" installation and put on the road by the National Radiator Co., Ltd., of Hull, will demonstrate as follows:—October 1, outside Constitutional Club, Commercial-road, Woking; October 2, in front of Newcastle Arms Hotel, Weybridge; October 3, Market-square, Staines; October 4, Egham and Thorpe Agricultural Show, Egham; October 5, Station Yard, Surbiton.

Jubilee Sports Celebrations.

The Jubilee celebrations and sports of Messrs. W. H. Willcox and Co., Ltd., of 38, Southwark-street, S.E.1, were held on September 15, at the sports ground, Elmer's End. This occasion—at which members of the firm and their families, numbering in all about 450, were present—was a very great success and provided a fitting seal to the attainment of 50 years' business as manufacturers' merchants and shippers.

Electric Fires.

We have received from Messrs. Carron Company, of Falkirk, a copy of their new season's electric fire list. This has been prepared on the loose-leaf or expanding principle, so that further designs may be added as and when new models are ready.

Carron electric fires embrace four distinct varieties: the "Carreflex" series, incorporating a patented reflector element; the "Cathedral" series, with frames of sheet-metal; the "Carcole" series of imitation live coal fires; and the "Stella" series comprising cast-iron and sheet-metal frames with the new "Stella" refractory element. The whole four series are constructed on scientific principles, embodying many exclusive and unique devices to ensure the highest degree of radiant and reflected heat for the current consumed. Full details and the list may be readily obtained on application.

Change of Address.

The sales office for the London District of Callender's Cable and Construction Co., Ltd., has been moved from 113-117, Charing Cross-road, to 2, Surrey-street, Strand (telephone: Central 7953), where a complete supply of rubber cable stocks and accessories is held. The company has taken the whole of these premises and other departments will be subsequently moved there. The registered office and headquarters will remain as hitherto at Hamilton House, Victoria Embankment, E.C.4. Telephone: Central 8903.

Cheaper Housing.

The Baldock, Herts, Council is building 15 three-bedroomed houses at £283 12s. each.

PORTLAND STONE
Stone from these Quarries was used in refacing Buckingham Palace & in the construction of Waterloo Station, Victory Arch, etc.
F.J. Barnes, Ltd. Quarry Owners. Office & Works: Portland, Dorset.
London Office: 25 Nine Elms Lane, S.W.8.

PRICES CURRENT OF MATERIALS.*

Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 5 6
Second Hard Stocks	3 19 6

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons, at		Best Blue	
King's Cross	2 12 3	Pressed Staffs	9 5 0
Do., grooved for Plaster ...	2 14 3	Do. Bullnose ...	9 15 0
Do., Bullnose...	3 7 3	Blue Wire Cuts	7 5 0

Best Stourbridge Fire Brick :—

2½ in.	8 11 0	3 in.	10 3 0

GLAZED BRICKS—			
Best White Ivory, and Salt Glazed Stretchers ...	1 0 0	D'ble Str'tch'rs	29 10 0
		D'ble Headers...	26 10 0
		One Side and two Ends ...	30 10 0
Headers	20 10 0	Two Sides and one End	31 10 0
Quoins, Bullnose and 4½ in. Flats	27 10 0	Splays, and Squints	28 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.

Delivered London

	s. d.		s. d.
2 in. per yd. super.	1 11	3 in per yd. super	2 9
2½ in. ,, ,,	2 4	4 in. ,, ,,	3 6

	s. d.	
Thames Ballast	10 6	per yd.
Pit Sand	13 9	,, ,,
Thames Sand	14 6	,, ,,
Best Washed Sand.....	14 6	,, ,,
⅜ in. Shingle for Ferro-Concrete	12 9	,, ,,
½ in.	14 0	,, ,,
¾ in. Broken Brick.....	11 6	,, ,,
Pan Breeze	8 0	,, ,,

delivered 2 miles radius Paddington.

Per ton delivered in London area in full van loads.
Best Portland Cement. British.
Standard Specification. Test £2 13 0 to £2 15 0
40s. alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	0 7 6
Super Cement (Waterproof)	4 3 0
Roman Cement	8 15 0
Parian Cement.....	5 15 0
Keene's Cement, White	5 15 0
,, ,, Pink.....	5 10 0
Plaster, Coarse, Pink	3 0 0
,, ,, White	3 12 6
,, Fine	5 12 0
Sirapite, Coarse	3 9 0
,, Finish	3 17 0
Grey Stone Lime.....	2 10 9
Chalk Lime	2 10 9
Best Ground Blue Lias Lime	1 17 6
Hair ..... per cwt.	2 2 6
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months carr. pd.
Stourbridge Fireclay in s'cks 37s. 0d. per ton at rly. dp.

STONE.

	s. d.
BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube.....	2 10
BEER STONE—RANDOM BLOCK— Free on rail at Seaton Station per ft. cube	2 3
Delivered free on rail Nine Elms, S.R. per ft. cube	3 1½
Selected approximate size one way, 1d. per cubic foot extra ; selected approximately three sizes or for special work, 3d. per cubic foot extra.	
PORTLAND STONE.— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube.....	4 4½
Do. do. delivered on road wagons at above stations, per ft. cube.....	4 5½
White basebed, 3d. per ft. cube extra.	
NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ¼d. beyond 30 ft.	
HOPTON-WOOD STONE.— Delivered at any Goods Station, London.	s. d.
Random blocks from 10 ft. and over P. ft. cb.	14 0
Sawn two sides ..... ,,	22 6
Sawn three or four sides ..... ,,	27 6
YORK STONE, BLUE—*Robin Hood Quality.* Delivered at any Goods Station, London.	
6 in , sawn two sides landings to sizes (under 30 ft. super)..... Per ft. super	5 6
6 in. rubbed two sides, ditto ..... ,,	6 0
3 in. sawn two sides slabs (random sizes) ,,	2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) ..... ,,	1 6½
1½ in. to 2 in. ditto, ditto ..... ,,	1 3½
HARD YORK— Delivered at any Goods Station, London. Scappled random blocks ..... Per ft. cube	6 3
6 in, sawn two sides landing to sizes (under 40 ft. super) ..... Per ft. super	5 1½
6 in. rubbed two sides, ditto ..... ,,	6 1½
4 in. sawn two sides slabs (random sizes) ,,	2 1½
3 in. ditto ditto ,,	2 10
2 in. self-faced random flags.....Per yd. super	8 8

CAST STONE.

Delivered in London area in full van loads, per ft. cube : Plain, 8s. 6d. ; Moulded, 9s. 6d. ; Cills, 10s.0d.

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£30 0	3 × 6	£21 0
4 × 9	26 0	3 × 11	25 0
4 × 8	25 0	2 × 11	26 0
4 × 7	23 0	3 × 9	24 0
3 × 8	22 0	2½ × 9	24 0
3 × 7	22 0	3 × 4½	21 0
2½ × 7	21 0	3 × 4	21 0

PLANED BOARDS.

1 × 11	£30 0	1 × 9	£28 0

PLAIN EDGE FLOORING

Inches.	per sq.	Inches.	per sq.
⅝.....	18/-	1¼.....	30/-
¾.....	21/-	1½.....	34/-
1	24/-		

TONGUED AND GROOVED FLOORING

Inches.	per sq.	Inches.	per sq.
1	24/-	⅝.....	16/6
1¼.....	30/-	¾.....	19/-
1½.....	34/-	1	24/-

Ins. BATTENS.	s. d.	SAWN LATHS.	s. d.
¾ × 2.....per 100 ft.	2 6	Per bundle	2 6

1" AND UP THICK.

	£ s. d.	£ s. d.
Dry Austrian Wainscot, per ft. cube	0 16 0	to 0 18 0
Dry American and/or Japanese Figured Oak, ft. cube.....	0 14 0	to 0 15 0
Dry American and/or Japanese Plain Oak, ft. cube	0 10 0	to 0 13 0
Dry sq. edged Honduras Mahogany, ft. cube.....	0 15 0	to 0 18 0
Dry Log cut Honduras Mahogany, ft. cube.....	0 16 0	to 1 1 0
Dry Cuba Mahogany, ft. cube...	1 1 0	to 1 10 0
Dry Teak, ft. cube	0 13 0	to 0 15 0
Dry American Whitewood, ft. cube	0 10 0	to 0 14 0
Best Scotch Glue, per cwt.	4 10 0	to —
Liquid Glue, per cwt.	4 7 0	to 5 10 0

SLATES.

First quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000.

	£ s. d.		£ s. d.
24 by 12	32 18 4	18 by 10	18 12 11
22 by 12	29 17 11	18 by 9	16 9 2
22 by 11	27 14 2	16 by 10	15 12 6
20 by 12	26 5 0	16 by 8	12 3 9
20 by 10	22 10 0		

TILES.

Delivered at London rate stations in full truckloads of not less than 6 tons. Per 1,000. f.o.r. London.

Best machine-made tiles from Broseley or Staffordshire district.....		5 7 6
ditto hand-made ditto		5 17 6
Ornamental ditto		6 2 6
Hip and valley tiles (per dozen)	Hand-made	0 9 6
	Machine-made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—

	£ s. d.
R.S. Joists, cut and fitted	12 10 0
Plain Compound Girders	14 10 0
,, Stanchions	16 10 0
In Roof Work	19 10 0

MILD STEEL ROUNDS.—To London Station, per ton

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	12 0 0	⅝ in. to ¼ in.	10 15 0
⅜ in.	11 0 0	⅜ in. to 2¼ in.	10 10 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Tubes. Wrought Mild Steel.	Tubes. Genuine Staffs. Iron.	Fittings. ½ in. and under.	Fittings. Over ½ in.	Flanges. ½ in. and under.	Flanges. Over ½ in.
	%	%	%	%	%	%
Gas	67½	50	42½	45	52½	55
Water	63½	46½	37½	40	47½	50
Steam	60	42½	32½	35	42½	45
Galv. gas.....	55	37½	32½	35	42½	45
Galv. water	50	32½	27½	30	37½	40
Galv. steam	45	27½	22½	25	32½	35

C.I.—HALF-ROUND GUTTERS—London Prices ex Works

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/3½	11½d.	3½d.
3½ in.	1/4½	1/1½	3½d.
4 in.	1/6	1/3	3½d.
4½ in.	1/7½	1/4½	4½d.
5 in.	1/10½	1/6½	5½d.
O.G. GUTTERS.			
3 in.	1/8	1/4½	3½d.
3½ in.	1/8	1/4½	3½d.
4 in.	1/9½	1/4½	3½d.
4½ in.	1/11½	1/7½	4½d.
5 in.	2/4½	1/10½	5½d.

RAIN-WATER PIPES, &c.

Per yd. in 6 ft.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/10½	1/3	1/9½
2½ in. ,, ...	2/0½	1/4½	2/1½
3 in. ,, ...	2/6	1/9	2/7½
3½ in.	2/11½	2/0½	3/0½
4 in. ,, ...	3/5	2/6½	3/8½

L.C.C. COATED SOIL PIPES—London Prices ex Works.

	Pipe.	Bends, stock angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6 fts. plain	3 3	2 4½	2 10
2½ in. ,,	3 9	2 7½	3 7
3 in. ,,	4 6	2 10	4 2½
3½ in. ,,	4 11½	3 7	4 11½
4 in. ,,	5 5½	4 0½	5 9

L.C.C. COATED DRAIN PIPES—London Price ex Works

	Pipe, angles, stock angles.	Bends, stock Branches.
	s. d.	s. d.
3 in. per yd. in 9ft. lengths	4 4	5 1
4 in. ,, ,,	4 10	5 8
5 in. ,, ,,	6 6	10 10
6 in. ,, ,,	6 8	13 2

	s. d.
Gasken for jointing, 38/6 per cwt.	8 0½
	10 0
	17 1
	21 9

Per ton in London.

IRON—	£ s. d.		£ s. d.
Common bars.....	13 0 0	to	14 10 0
Staffordshire Crown Bars— Good merchant quality	14 5 0	to	15 15 0
Staffordshire Marked Bars.....	16 5 0	...	17 5 0
Mild Steel Bars	10 0 0	...	11 0 0
Steel Bars, Ferro-Concrete quality, basis price	10 0 0	...	11 0 0
Hoop iron, basis price	12 0 0	...	13 0 0
,, Galvanised	27 0 0	...	28 0 0
Soft Steel Sheets, Black— Ordinary sizes, to 20 g....	13 5 0	...	14 5 0
,, ,, ,, 24 g....	14 5 0	...	15 5 0
,, ,, ,, 26 g....	16 5 0	...	17 5 0
Sheets Flat Best Soft Steel, C.R. and C.A. quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 10 0	...	16 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.....	16 10 0	...	17 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g....	18 10 0	...	20 10 0
No. 1 quality £4 per ton extra.			
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9 ft. to 20 g.	18 0 0	...	19 0 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	18 10 0	...	19 10 0
Ordinary sizes. 6 ft. to 9 ft. to 26 g.	21 10 0	...	22 10 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	22 0 0	...	23 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	24 0 0	...	26 0 0
Best Soft Steel Sheets, 26 g.	25 10 0	...	26 10 0
Cut Nails, 3 in. to 6 in.....	18 0 0		

(Under 3 in. usual trade extras.)

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

LEAD, &c.

(Delivered in London.)	£ s. d.
LEAD—Sheet, English, 4 lb. and up	30 0 0
Pipe in coils	30 10 0
Soil pipe	33 10 0
Compo pipe	34 10 0

NOTE.—Country delivery, 20s. per ton extra ; lots under 3 cwt. 3s. per cwt. extra, and over 3 cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 5s. cwt. extra.

Oil lead, ex London area, at Mills ..... per ton	20 5 0

COPPER.

	s. d.
Seamless Copper tubes (basis).....per lb.	1 1
Strong sheet ..... ,,	1 0
Thin..... ,,	1 1
Copper nails ..... ,,	2 3
Copper wire ..... ,,	2 4

PLUMBERS' BRASS WORK
Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
7/6	11/-	17/-	29/-	36/-	63/- per doz.

BRASS SLEEVES.

1½ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES, S.P.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

	1½ in.	1½ in.	2 in.	3 in.
8 lbs. P. traps ...	33/-	41/-	56/-	101/- per doz.
8 lbs. S. traps ...	35/-	45/-	66/-	126/- ,,

TIN.—English Ingots, 2/6 per lb. SOLDER.—Plumber's 1/1. Tinmen's 1/4, Blowpipe 1/5 per lb.

PAINTS, &c.

			s. d.
Raw Linseed Oil, in pipes	per gallon		0 2 8
,, ,, ,,	in barrels ...	,,	0 2 10
,, ,, ,,	in drums ...	,,	0 3 0
Boiled ,, ,,	in barrels ...	,,	0 3 0
,, ,, ,,	in drums ...	,,	0 3 3
Turpentine	in barrels ...	,,	0 3 10
,, ,,	in drums (10 gals)	,,	0 4 0
Genuine Ground English White Lead, per ton			52 0 0

(In not less than 5-cwt. casks.)
Extra for 1-cwt. kegs over 5-cwt. casks is 5/9 cwt.

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd.*)

PAINTS, &c. (*contd.*)

		£	s.	d.
GENUINE WHITE LEAD PAINT. "Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J," Brand, and other best brands (in 14 lb. tins) not less than 5 cwt. lots	per ton delivered	70	10	0
Red Lead, Dry (packages extra) ...	per ton	39	10	0
Best Linseed Oil Putty	per cwt.	0	15	0
Fillcol	"	0	15	6
Size. XD quality	fkn.	0	3	6

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per ft.		Per ft.
15 oz. fourths ...	2½d.	32 oz. fourths	6½d.
15 " thirds ...	3½d.	32 " thirds	8½d.
21 " fourths ...	3½d.	Obscured Sheet, 15 oz.	3½d.
21 " thirds ...	4d.	" " 21 "	4½d.
26 " fourths ...	3½d.	Fluted 15oz.6½d.,21oz.	9d.
26 " thirds ...	6½d.	En'lled 15 oz. 4½d., 21 oz.	6d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED plate in CRATES OF STOCK SIZES.

	Per ft.
⅛ Rolled plate	4½d.
¼ Rough rolled	5½d.
½ Rough rolled	5½d.
Figured Rolled, Baltic, Oceanic, Arctic Stippolyte, and small and large Flemish White	5½d.
Ditto, tinted	8½d.
Rolled Sheet	4½d.
White Rolled Cathedral	4½d.
Tinted do.	6½d.

Cast plate is same price as rough rolled.

VARNISHES, &c.

		Per Gallon £	s.	d.
Oak Varnish	Outside	0	14	0
Fine ditto	ditto	0	16	0
Fine Copal	ditto	0	18	0
Pale Copal	ditto	1	0	0
Pale Copal Carriage	ditto	1	4	0
Best ditto	ditto	1	12	0
Floor Varnish	Inside	0	18	0
Fine Pale Paper	ditto	0	18	0
Fine Copal Cabinet	ditto	1	2	6
Fine Copal Flatting	ditto	1	0	6
Hard Drying Oak	ditto	0	18	0
Fine Hard Drying Oak	ditto	0	19	0
Fine Copal Varnish	ditto	1	0	0
Pale ditto	ditto	1	2	0
Best ditto	ditto	1	12	0
Best Japan Gold Size		0	12	6
Best Black Japan		0	10	6
Oak and Mahogany Stain (water)		0	12	0
Brunswick Black		0	7	6
Berlin Black		0	14	0
Knotting (patent)		1	5	0
French and Brush Polish		0	17	0
Liquid Dryers in Terebine		0	9	0
Cuirass Black Enamel		0	7	0

THE INSTITUTE OF BUILDERS

FOLLOWING is a list of successful candidates in the Institute of Builders' examinations :—

Licentiate Diploma Examination.

G. E. Anderson (Wanstead), A. F. Beer (Chelmsford), A. E. Blunden (Shepherd's Bush), A. E. Brown (Acton), C. W. A. Bryant (Wimbledon Park), H. C. J. Burbridge (Ilford), W. A. Close (Kingsland), H. Cooper (Southgate), E. B. Cruse (Wood Green), C. W. Cubitt (Wandsworth), J. L. Dancer (Camberley), E. H. J. Evans (Didcot), G. J. Evans (Hackney), H. Fresco (Egypt), R. F. Gandy (Hove), R. T. Gratwick (Bow), L. H. Green (Wood Green), T. Gregson (Manchester), F. C. Howard (Cheriton), G. H. Ingham (Enfield), I. Langley (Birmingham), W. G. Layfield (Margate), J. Lee (West Kirby), J. A. Lees (Macclesfield), S. Lintern (Bath), R. Lucas (East Dulwich), T. G. Mayes (Brighton), F. E. Neale (Wembley Park), J. Overton (Ingatestone), O. J. Pierce (Kampala, Uganda), J. B. Pilbrow (Muswell Hill), F. G. Pooley (Clapton), M. V. Refell (Richmond), P. A. W. Roffey (Putney), T. Trepess (Warrington), F. Trower (Worthing), E. R. Vose (Lytham St. Annes), P. F. Williams (East Molesey), J. F. Wilby (Leeds).

Associate Diploma Examination.

H. J. Brownjohn (Ealing), J. C. Corben (Maidstone), C. G. Cottle (Upton Park), C. I. V. Curtis (Clapton), W. D. Freeman (Sutton), S. J. Lawrence (Luton), G. M. Linzell (Faversham), C. W. Moore (Catford), G. F. Symes (Wanstead), R. J. Wheatley (Thornton Heath).

THE SCOTTISH BUILDER

HOUSING PROGRESS

THE following figures show the progress that has been made in State aided housing schemes in Scotland to August 31, 1928 :—

	Completed.	Under Construction.
1919 Act	25,129	—
1919 Act (by public utility societies)	421	—
Private subsidy schemes (1919 Additional Powers Act)	2,324	—
Slum clearance schemes ...	7,837	2,878
1923 Act :—		
By local authorities ...	3,979	70
By private enterprise ...	13,253	2,657
By public utility societies	80	—
1924 Act :—		
By local authorities ...	25,273	12,115
By private enterprise ...	567	467
By public utility societies	49	78
Demonstration houses ...	17	—
Steel houses erected on behalf of Government by Scottish National Housing Company	2,552	—
	81,481	18,265

NEW BUILDINGS

The Editor would be glad to receive information for publication under this heading from architects, builders, or other persons concerned.

Ashludie.—ADDITIONS.—At a meeting of the Public Health Committee of Dundee Town Council it was reported that the Scottish Board of Health had approved generally of the offers submitted for the construction of additions to the administrative block, etc., at Ashludie Sanatorium. The total cost is about £13,000.

Dunbar.—HOUSING.—The Dunbar Town Council has received the Board of Health approval to the erection at Boroughdales, Dunbar, of other 16 three-apartment houses, and four two-story houses of four-apartments.

Edinburgh.—CINEMA.—Plans for a new house at Manse-road, Corstorphine, have been passed by Edinburgh Dean of Guild Court. The new house will accommodate 1,500 people, and Mr. F. R. Graham Yool is one of the promoters.

Glasgow.—CLUB-HOUSE.—The Parks Committee of the Corporation propose that the Director of Parks be authorised to proceed with the work of erecting a club-house at the new Ruchill Golf Course. The estimated cost is £1,050.

Jedburgh.—HOUSING.—The North British Artificial Silk Co., Ltd., are to erect 76 houses for the accommodation of the workers who will be employed in the new factory which is being erected. The total cost of the scheme will be about £35,400.

Proposed New Liverpool Hospital.

Plans have been prepared for the erection of a new hospital for women to cost £120,000. The surveyors are Messrs. J. E. Blaydon and Sons, 12, Preeson's-row, and Messrs. Edmund Kirby and Sons, 5, Cook-street, the architects.

Slippery Roads; Official Experiments.

The provision of a road surface which will withstand the strain of modern traffic and yet be free from that slipperiness of which so many complaints are now made by road users is one of the most difficult problems now confronting road authorities. The polished surface which the new bituminous roads speedily acquire under motor traffic renders such thoroughfares highly dangerous in wet weather, and experiments are accordingly being carried out by the Ministry of Transport with a view to discovering the best road surface material and also to finding out how the design of vehicles might be improved so as to render the vehicles less liable to skid.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rate of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers—Masons' ‡ Bricklayers'‡ Plasterers'†
Aberdeen	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/2½ †1/2½
Airdrie	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/2½ †1/2½
Alexandria	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/2½ †1/2½
Arbroath	1/6½	1/6½	1/6½	1/7½	1/6½	1/6½	1/5½	1/1
Ayr	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2½
Bathgate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2 to 1/3
Blairgowrie	1/7	1/7	1/7	1/7½	1/5	1/7	1/4	10d. to 1/-
Bo'ness	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/2½ †1/2½
Coatbridge	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/2½ †1/2½
Dumbarton	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/2½ †1/2½
Dumfries	1/6½	1/6½	1/6½	1/7½	1/6½	1/6½	1/6½	1/2
Dundee	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/3 †1/2½
Dunfermline	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7½	‡1/2½ †1/2½
Edinburgh	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/3½ †1/2½
Falkirk	1/7½	1/7½	1/7	1/8	1/7	1/7	1/6½	1/2½
Fort William	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2
Galashiels	1/6½	1/7	1/6½	1/7	1/6½	1/6½	1/7	1/2
Glasgow	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/2½ †1/2½
Greenock	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7	1/2½
Hamilton	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/2½ †1/2½
Hawick	1/7	1/7	1/7	1/7–1/7½	1/7	1/7	1/7	1/2½
Helensburgh	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7	1/2½
Inverness	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/- to 1/2
Kilmarnock	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	1/2½
Kirkcaldy	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/2½ †1/2½
Kirkwall	1/5	1/5	1/4	1/5	1/5	1/4	1/4	1/-
Lanark	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/2½ †1/2½
Leith	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/3½ †1/2½
Motherwell	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/2½ †1/2½
Perth	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/2½ †1/2½
Stirling	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7½	1/2½
Stirlingshire (Eastern District) ...	1/7½	1/9	1/7½	1/8½	1/7½	1/7½	1/8	1/2½
Wishaw	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	‡1/2½ †1/2½

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 527.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	0
Add if in clay	" "	1	0
Add for every additional depth of 6 ft.	" "	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	" "	1	0

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	38	0
Add if in underpinning in short lengths	" "	7	0
Add if in floors 6 in. thick	" "	3	3
Add if in beams	" "	3	9
Add if aggregate 1 : 2 : 4	" "	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	2	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	32	0	0
Add if in stocks	"	7	10	0
Add if in Staffordshire blues	"	22	0	0
Add if in Portland cement and sand	"	1	10	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

		s.	d.
Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—

		s.	d.
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	0
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarter-inch vertical damp course	" "	9	6
Three-quarter-inch on flats in two thicknesses	" "	6	3
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	2

MASON.

		s.	d.
York stone templates fixed	per foot cube	13	0
York stone sills fixed	" "	22	0
Bath stone and all labour fixed	" "	10	6
Beer stone and all labour fixed	" "	15	0
Portland stone fixed	" "	20	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9
Do. 20 in. × 10 in. Do. Do.	"	80	9
Do. 24 in. × 12 in. Do. Do.	"	90	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	5	0
Do. joists	" "	5	6
Do. roofs, floors and partitions	" "	6	0
Do. trusses	" "	8	6

		¾"	1"	1¼"	2"
Deal rough close boarding	per sq.	35/6	40/-	45/-	72/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	50	0
Do. to beams	per ft. sup.	0	11
Centre for arches	"	1	6
Gutter boards and bearers	"	1	0

FLOORING.

		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.	—	44/6	53/-	60/6
Do. tongued and grooved	"	—	49/-	57/6	65/-
Do. matchings	"	45/-	51/-	—	—
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/-	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Dc.	" "	2	1
Add for fitting and fixing	" "	0	3
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights ; average size	" "	3	9

DOORS.

		1½"	1¾"	2"
Two-panel square framed	per ft. sup.	2/1	2/4	2/6
Four-panel Do.	"	2/5	2/8	2/11
Two-panel moulded both sides	"	2/8	2/11	3/2
Four-panel Do. Do.	"	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	1/7	1/8	1/11
Deal shelves and bea ers	"	1/4	1/6	1/9
Add if cross-tongued	"	2d.	2d.	2d.

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail : average, 3 in. × 3 in.	" "	6	0
Add if ramped	" "	12	0
Add if wreathed	" "	24	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	16	3
Plain compound girders	"	19	0
Do. stanchions	"	21	9
In roofwork	"	27	6

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/6	1/9	2/-	2/6
Ogee Do. Do.	"	1/9	2/-	2/6	3/3
Rain-water pipes with ears	"	1/9	2/7	—	—
Extra for shoes and bends	each	4/4	5/11	—	—
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	43	0
Do. Do. in flats	"	42	0
Extra labour and solder in coated cesspools	each	6	9
Welf joint	per ft. run	0	6
Soldered seam	" "	1	3
Copper nailing	" "	0	3

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	1/2	1/9	2/-	3/4	4/-	—
Do. service	"	1/8	2/2	2/7	3/10	—	—
Do. soil	"	—	—	—	—	—	6/9
Bends in lead pipe	each	—	—	—	—	3/3	8/2
Soldered stop ends	"	1/2	1/8	2/1	2/10	3/6	—
Read lead joints	"	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	"	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	"	—	—	—	14/7	19/6	—
Bib cocks and joints	"	6/4	9/7	15/4	41/-	—	—
Stop cocks and joints	"	15/4	17/2	25/8	64/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	6
Do. Do. Sirapite	" "	2	9
Do. Do. Keen's	" "	4	0
Add saw lathing	" "	1	7
Add metal lathing	" "	2	6
(Not including hangers or runners, etc., for suspended ceilings.)			
Portland cement screed	" "	2	2
Do. plain face	" "	3	3
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	6

GLAZIER.

		s.	d.
21-oz. sheet plain	per foot sup.	0	8½
26-oz. Do.	" "	1	0
Obscured sheet	"	1	1
⅛-in. rolled plate	" "	0	9
¼-in. rough rolled or cast plate	" "	0	10½
¼-in. wired cast plate	" "	1	4

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	" "	0	7
Plain painting, 1 coat	" "	0	9
Do. 2 coats	" "	1	2
Do. 3 coats	" "	1	9
Do. 4 coats	" "	2	4
Graining	" "	2	3
Varnishing twice	" "	1	9
Sizing	" "	0	3
Flatting	" "	0	7
Enamel	" "	1	1
Wax polishing	per foot sup.	0	6
French polishing	" "	1	2
Preparing for and hanging paper	per piece, 2/- to 4/-		

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modifications.*
¶ Denotes *accepted by H.M. Office of Works, and H.M. War Office.*

Alrewas.—Reconstruction of Kent's Canal Bridge, Alrewas, in reinforced concrete, for the Staffordshire C.C. Mr. Robert S. Murt, County Surveyor. Quantities by the County Surveyor:—
*W. E. Ward, Alrewas, Staff.

Ashton-under-Lyne.—Houses on the King's-road housing estate, for the Corporation. Mr. J. Rowbottom, Borough Surveyor:—
*William Chappell & Sons, Ltd., Sheffield.

Atherton.—44 non-parlour houses on Hag Fold estate, for the U.D.C. Mr. F. J. Boydell, surveyor:—
*G. & J. Seddon, Ltd., Little Hulton.

Ballycastle.—Technical school, for the North Antrim Regional Committee:—
*W. Currie, Coleraine £7,650

Barking Town.—Culverting of the Kingsbridge sewer, for the U.D.C.:—
*W. & C. French, Buckhurst Hill £2,274 8 4

Barking Town.—Grand stand in the Vicarage Field, for the U.D.C.:—
*H. Newell, London £2,001 10

Barking Town.—Widening and reconstruction of Jenkins-lane, for the U.D.C.:—

G. J. Anderson	£25,148 14 3
T. W. Pedrette	24,961 6 8
G. Wimpey & Co.	23,856 2 7
Engineer and Surveyor	23,204 11 4
‡W. & C. French	22,409 1 7

Barnsley.—Relining the interior of two filter beds at Ingbirchworth, for the T.C. Mr. J. R. Fox, waterworks engineer:—
*Cement Gun Co., London £1,800

Barnsley.—150 additional houses on the Burton Grange site, for the Council:—
‡W. Dunk & Sons (100).
‡D. Potter & Sons (50).

Bedford.—Warehouse premises at St. Mary's-street. Messrs. Usher & Anthony, architects, St. Paul's-square:—
*A. White, Bedford.

Beeston.—600 yards of 12 in. diam. stoneware pipe sewer; and additional units at existing sewage disposal works, comprising two storm-water tanks, one circular percolating filter bed, screening chambers and other appurtenant works; also alterations and additions to the refuse destructor unloading shed, for the U.D.C. Mr. E. A. Bush, surveyor. Quantities by Messrs. W. H. Radford & Son, civil engineers, Nottingham:—

H. H. Barry, Radcliffe-on-Trent	£9,450
Swift Bros. & Hoslam, Doncaster	7,892
Tattersall, Carlton	7,642
A. H. Price & Co., Nottingham	7,605
Turner & Co., London	7,407
Ward & Tetley, Bradford	7,242
Bentley & Wardman, Bradford	7,100
H. Sewell, Ilkeston	6,510
*Provincial Construction Co., Sunderland (sewage tanks, etc.)	6,500
*C. S. Tomlinson, Alfreton (sewer)	6,387

Belfast.—Public elementary school in Riga-street, for the E.C. Education Architect, Victoria-street. Quantities by Mr. S. C. Hunter, F.S.I., 2, Wellington-place:—
*W. Dowling, Ltd. £23,898

Birmingham.—Plastering at Selly Oak Hospital, for the B.G. Mr. F. H. Julian, Steward of the Hospital:—
*C. Trumper & Sons, Birmingham ... £1,157 17

Birmingham.—Extensions, alterations and renovations to "Sorrento" hospital, Wake Green-road, Moseley, for the T.C. Mr. R. T. Cooke, Manager of Works, City Hospital, Little Bromwich:—
*B. S. White, Selly Oak £2,269

Blantyre.—Manse buildings for Livingstone Memorial U.F. Church. Messrs. Cullen, Lochhead & Brown, architects, Cadzow-street, Hamilton:—
Mason and brickwork—
*Andrew Wright & Sons.
Plumbing—
*Thomas Taylor.
Plastering and roughcast work—
*C. Nesser.
Joiner—
*D. & W. Ritchie.
Painter—
*Brown Bros.

(All of Blantyre.)

Boston.—Extension at the north-west corner the building for the Committee of Management of the Boston (Lincs) Hospital:—
*F. Peck & Son, Boston £1,489

Bolton.—Wesleyan Church at Tonge Moor. Messrs. Potts, Hennings & Topping, architects, 41, Bradshawgate:—
Brickwork—
*J. Holland.
Plumber—
*Gibbons.
Plastering and painting—
*H. & R. Jones.
Slating—
*Hodson.

(All of Bolton.)

Calne.—Elementary school, for the Wiltshire C.C. Mr. T. Walker, F.R.I.B.A., County Architect, County Offices, Trowbridge:—
*L. Maslan & Sons, Devizes.

Carlisle.—School and chapel at Thorn Hill, Whitehaven. Messrs. Arthur Brocklehurst & Co., F.R.I.B.A., architects, Norfolk-street, Manchester:—
*James Leslie & Sons.
Plumbing—
*Hodgson.
Joiner—
*Robinson & Sons.
Plastering—
*Lawson & Sons.

Carrick-on-Shannon.—Repairs to tuberculosis dispensary, for the County Leitrim Board of Health:—
*G. Johnston, Ballinamore £187

Chelmsford.—Pair of cottages, at the Sewerage Farm, for the Chelmsford U. and R.D.C.'s. Mr. E. J. Miles, Municipal Offices:—
*Pearson, Blackwell, Ltd., Doncaster ... £716

Chester.—116 houses, on the Eaton-road estate, for the T.C.:—
*H. Pugh, Wrexham £43,452 2 8

Chester.—Five houses and shops and three non-parlour type cottages, upon the Handbridge site, for the T.C.:—
*T. Boddy, Broughton £7,086 15 5

Chipping Sodbury.—80 houses in district, for the R.D.C. Messrs. W. H. Williams & H. S. Hale, architects and surveyors:—

*H. C. James, 2, Montgomery-st., Cardiff (Yate)	£6,306 17 0
*Morgan Bros., Ltd., Gloucester (Stoke Gifford)	3,029 5 1
*Willmott Bros., Kingswood, Bristol (Frenchay)	2,757 10 0
*Willmott Bros., Kingswood, Bristol (Marshfield)	2,133 0 6
*Jos. Gunning, Warmley, Bristol (Old Sodbury)	2,224 11 0
*Jos. Gunning, Warmley, Bristol (Doynton)	703 13 6

Cork.—Motor-car engineering laboratory and carpentry workshop, for the Municipal Technical Instruction Committee:—

D. Hurley	£2,392
Coughlan Bros.	1,375
Sowersby & Co.	1,255
J. Buckley	1,227
W. Crowley	1,227
*R. Manony	1,069

Croydon.—Block of shops with flats over on the site of 21/41, South End, for the C.B.:—
*E. H. Smith, Croydon £11,790

Croydon.—90 houses on the Mitcham-road housing estate, for the C.B.:—

Henry Boot & Sons, Ltd., London	£42,010
Truett & Steel, Ltd., London	40,855
Unit Construction Co., Ltd., London	38,782
Reynolds, Harries & Co., Cheltenham	38,154
C. J. Doyle, Liverpool	38,124
Martin & Pearce, Hornsey	37,215
*Blackwell & Meyer, London	35,997

Croydon.—120 houses on the Mitcham-road housing estate, for the C.B.:—

Bridge & Co., London	£56,605 0
R. J. Rowley, Ltd., Tottenham	55,840 0
Henry Boot & Sons, Ltd., London	54,196 0
Truett & Steel, London	53,930 0
Unit Construction Co., Ltd., London	51,796 0
Reynolds, Harries & Co., Cheltenham	50,512 0
Franklin & Co., Erith	50,508 0
C. J. Doyle, Liverpool	50,052 0
Martin & Pearce, Hornsey	49,214 0
Blackwell & Meyer, London	48,588 10
*Wm. Bagg & Sons, Ltd., Porthcawl	46,998 0

Croydon.—64 houses on the Hermitage-road housing estate, for the C.B.:—

Truett & Steel, Ltd.	£30,795 0 0
Lawes, Cherry & Co., Ltd.	30,569 7 6
Henry Boot & Sons, Ltd.	30,414 5 0
Unit Construction Co., Ltd.	29,462 0 0
*Blackwell & Meyer	28,125 0 0

(All of London.)

Croydon.—Painting and decorating the Baths Hall at Croydon Baths, for the C.B.:—
*W. O. Everitt, Ltd., London £260

Croydon.—Cattle shed and bull house at Beddington Farm, for the C.B.:—

Grace & Marsh, Ltd., Croydon	271 0
Burnand & Pickett, Ltd., Wallington	264 10
G. Poulton & Sons, Thornton Heath	259 15
*N. A. Harvey, Mitcham	198 10

Croydon.—Erection of Lancaster-road sub-station building, for the C.B.:—

Maides Bros.	£210
E. H. Smith	195
E. J. Saunders	195
R. Mansell	179
G. Poulton & Sons	170
Truett & Steel, Ltd.	170
*D. Waller	153

(All of Croydon.)

Derby.—Wesleyan Church, Devonport-road, for the Wesleyan Authorities. Messrs. A. Brocklehurst & Co., F.R.I.B.A., architects, 10, Norfolk-street, Manchester:—
*Ford & Weston, Derby £6,500

Dublin.—Glazing and slating the Fruit and Vegetable Market, for the City Commissioners:—
*P. D. Bolger 2,135

Edinburgh.—New "Playhouse" cinema, to accommodate over 3,000 people. Mr. J. Fairweather, F.R.I.B.A., architect, Trongate, Glasgow:—
Mason and Brickwork—
*Bruce & Sons.
Steelwork—
*Redpath, Brown & Co.
Joiner—
*Adam Currie & Sons, Ltd.
Reinforced Concrete—
*Allen Construction Co., Glasgow.
Heating—
*Inglis.
Slating—
*Dunlop & Co.

(All of Edinburgh.)

Exeter.—Extension to tramway depot, for the T.C. Mr. John Bennett, City Architect. Quantities by the Architect's Dept.:—
*D. Stoneman, Whipton £7,589 19 7

Gildersome.—8 houses on Vicarage site, for the U.D.C.:—
Builder—
*H. Barraclough, Morley.
Joiner—
*A. Schofield, Gildersome.
Plumber—
*J. Willey & Son, Gildersome.
Slater—
*Geo. Rogerson, Ltd., Morley.
Plasterer—
*H. Barraclough, Birstall.
Painter—
*E. Eccles, Halifax.

Halifax.—Nurses' Home, at the Royal Halifax Infirmary, for the Committee. Messrs. Walsh & Maddock, chartered architects and surveyors, 10, Harrison-road:—
Mason—
*E. & T. Bower, Ltd., Halifax.
Joiner—
*E. Holstead & Son, Halifax.
Plumber—
*John Holdsworth, Halifax.
Slater—
*H. Castle & Son, Ltd., Brighouse.
Plasterer—
*J. Bancroft & Son, Halifax.
Asphalter—
*Tunstalls, Ltd., Leeds.
Painter—
*W. Speak & Son, Halifax.
Flooring—
*Rockwood Terrazzo, Ltd., Manchester.

Helston.—Bungalow, at Penhellay. Mr. R. J. Wearne, Alma House, Helston, Cornwall. Quantities by the architect:—

J. J. Dunn	£385
Carpentry only—	
Martin Bros.	167
Masonry only—	
A. Beesley	240
Carpentry only—	
*Richards & Trezise	128
Masonry only—	
*S. Mildren	239

(All of Helston.)

Hendon.—40 cottages on Pinner Hill-road housing site, for the R.D.C.:—
*Swainson & Co., Ltd. £2,524 18

Hyde (Cheshire).—Erection of Greenfield-street Council school. Mr. F. Quentery Farmer, L.R.I.B.A., architect, 35, Maddox-street, W.1. Quantity Surveyor, Mr. Henry A. Mackmin, F.S.I., 10, Vigo-street, Regent-street, London:—

Bovis, Ltd., London	£24,197
Melville Dundus & Whitson, London	23,872
Building & Engineering Contractors, Ltd., Sheffield	22,383
Hughes & Stirling, Liverpool	22,282
C. H. Normanton & Son, Ltd., Manchester	21,924
J. Dolan & Son, Warrington	21,650
Leach & Unsworth, Ltd., Manchester	21,375
J. Gerrard & Sons, Ltd., Swinton	21,090
Fowden, Mottram & Smith, Hyde	21,050
R. Carlyle & Co., Ltd., Manchester	20,995
Wellerman Bros., Ltd., Hyde	20,850
W. Thorpe & Son, Manchester	20,650
Peace & Norquoy, Ltd., Manchester	20,500
James Byrom, Ltd., Bury	20,400
E. Marshall & Sons, Ashton-under-Lyne	19,856
Crompton Bros., Hyde	19,829
Gladden & Davies, Ltd., Manchester	19,799
J. Partington, Ltd., Middleton	19,350
J. Ridyard & Sons, Ltd., Ashton-under-Lyne	19,137
Thomas Warrington, Hyde	19,000
W. Norgrove & Sons, Ltd., Hyde	18,750

Hull.—Improvements to premises in Prospect-street. Mr. A. Easton, F.R.I.B.A., architect, 1, Manor-street:—

*Charles Houlton, Hull.

Ince-in-Makerfield.—12 parlour-type houses and 36 non-parlour houses on the Higher Ince housing estate, for the U.D.C. Mr. W. Thorley, L.R.I.B.A., architect, 36, Wallgate, Wigan:—

*Clough & Gaskell, Wigan.

Ireland.—The following contracts have been placed by the Commisioners of Public Works:—

Barnaderg Garda Siochana Station, Co. Galway (erection of station)—
P. Burke, Ballinderreen, Kilcolgan.
Carrigans National School, Co. Cavan (enlarging of school)—
M. Flynn, Pennor, Oldcastle.
Carratigue National School, Co. Mayo (enlarging of school)—
P. Sherran, Carratigue, Co. Mayo.
Central Model Schools, Dublin (external plastering)—
P. P. Fearon & Co., Ranelagh.
Glencastle National School, Co. Mayo (enlarging of school)—
J. Dempsey, Belmullet.
Island Bridge Barracks, Dublin (erection of garage, forge sheds, etc.)—
A. P. Watkinson, 121, St. Stephen's Green, Dublin.
Kilbaha National School, Co. Kerry (erection of school)—
M. A. Hannon, Listowel.
Kilmore Erris National School, Co. Mayo (enlarging of school)—
J. Dempsey, Belmullet.
Quignamanger National School, Co. Mayo (enlarging of school)—
J. Molloy, Ballina.

Leeds.—Alterations at the Bay Horse Inn, Meanwood-road, for Messrs. John Smiths, Ltd.:—

*Wm. Thompson & Sons, Ltd.

Limavady.—40 cottages, for the R.D.C.:—

*T. J. Fleming, Garvagh, three blocks of semi-detached cottages (per block)	£554
*T. J. Fleming, Garvagh, one block of two	597
*T. J. Fleming, Garvagh, two blocks ...	555
*T. J. Fleming, Garvagh, three singles (each)	310
*T. J. Fleming, Gargagh, four blocks of two (per block)	559
*Scott Bros., Dungiven, two blocks of two	550
*Scott Bros., Dungiven, two blocks of two	545
*John Deeny, Ballyrory, two blocks of two	549
*John Deeny, Ballyrory, two singles (each)	312
*Jeremiah O'Hara, Bolie, Greysteel, one single	315
*William Pollock, Leck, one single	305
*William Pollock, Leck, one single	312

Liverpool.—New Church of St. Andrew's with frontages to Muirhead-avenue and Queen's-drive, for the Parochial Council. Messrs. Morter & Dobie, L. & A.R.I.B.A., architects, 36, The Temple, Dale-street:—

*Morrison & Sons, Wavertree.
Marble work—
*J. Stubbs & Sons, Liverpool.
Electricians—
*John Hunter & Co., Liverpool.

London.—Repairing and painting the exterior of the Lower Holloway Infant Day Nursery at 547, Liverpool-road, for the Islington B.C.:—

G. S. Stevens	£175 0
A. Cheetham	133 0
J. C. Mather & Son	112 0
Randall & Sons	111 5
*Stevens & Sons	78 10

(All of London.)

¶London.—Tenders accepted by H.M. Office of Works for August:—

BUILDING WORKS.

Aylesbury P.O., alterations, etc.: Spear & King, Crowthorne.
Basford, Nottingham, employment exchange, erection: C. H. Hill, Mansfield.
Belfast, Parliament Building, sculpture: Earp, Hobbs & Miller, Manchester.
Bridlington, coastguard cottages, erection: E. Gray, Bridlington.
Canterbury P.O., etc., steelwork: Measures Bros. (1911), Ltd., London S.E.
Dollis Hill, Cricklewood, N.W., laboratory, plumber: J. C. Spooner & Son, London, E.C.
Farnborough, Hants, telephone exchange, erection: H. J. & A. Wright, Ltd., Great Missenden; steelwork: E. Wood & Co., Ltd., Manchester.
G.P.O., E.C., extension: H. Lacey & Sons, Luton; steelwork: Redpath, Brown & Co., Ltd., London, E.C.
Hackney, E., P.O., etc., plasterer: Telling Bros., London, S.E.; plumber: J. C. Spooner & Sons, London, E.C.; roof: Diespeker & Co., Ltd., London, E.C.
Heywood employment exchange, plasterer: John Hamer, Bury.
Hove, Brighton, branch P.O., adaptations: Limpus & Son, Hove.
King's Cross, W.C., employment exchange, glazier: John Thompson Beacon Windows, Ltd., London, W.C.
Leeds, Walker Buildings, adaptations: W. Irwin & Co., Ltd., Leeds; painter: Chas. Fenton & Sons, Leeds; plasterer: Cowling & Hobson, Leeds.
Leicester, station sorting office, steelwork: W. Richards & Son, Leicester.
Leopoldville, West Africa, H.M. Consulate, joinery: Wm. Harbrow (1923), Ltd., London, S.E.
Loughborough, head P.O., erection: A. Holmes & Sons, Ltd., Burton-on-Trent; asphalter: London Asphalte Co., Ltd., London, E.C.; steelwork: Dunlop & Ranken, Ltd., Leeds.
Lough P.O., etc., steelwork: Dunlop and Ranken, Ltd., Leeds; stonemasonry; H. Spilman, Scunthorpe.
Marlborough House, S.W., main entrance, etc., alterations: Holloway Bros. (London), Ltd., London, S.W.
Marylebone, N.W., County Court, alterations: B. Colley & Sons, Ltd., London, W.; bituminous roofing: Permanite, Ltd., London, E.C.; patent glazing: W. H. Heywood & Co., Ltd., London, S.W.; steelwork: The Aston Construction Co., Ltd., London, N.
Mitcham P.O., etc., roadway: Josiah Smart & Son, London, W.C.
Mumbles, Glam., telephone exchange, asphalter: La Brea Asphalte Co., Ltd., London E.C.
Niton, St. Catherine's Point wireless station, additions: H. Ingram & Sons, Ventnor.
North Foreland, new wireless station, erection: W. W. Martin, Ramsgate.
Palmer's Green, N., telephone exchange, extension: Chessums, Ltd., London, N.
Pembroke branch P.O., ply felt: Engert & Rolfe, Ltd., London, E.
Poole telephone exchange, erection: Harry Neal, Ltd., Northwood.
Port Erin, Douglas, repeater station, alterations, etc.: J. McArd & Son, Port Erin.
Red Hill telephone exchange, erection: A. Roberts & Co., Ltd., London, W.
St. Helens sorting office, etc., erection: Wm. Griffiths, Sons & Cromwell, Ltd., Liverpool.
Sherborne P.O., etc., joiner: H. F. Tottle & Sons, Bridgwater; steelwork: Stock & Collings, Bristol.
Streatham, S.W., branch P.O., alterations: J. Garrett & Son, Ltd., London, S.W.
Taplow, Maidenhead, telephone repeater station, erection of residence: A. C. Dean, High Wycombe.
Tate Gallery, S.W., alterations: Galbraith Bros., Ltd., London, S.E.; steelwork: Redpath, Brown & Co., Ltd., London, E.C.
Upminster, Essex, telephone exchange, plasterer: A. J. R. Aubry, Woking.
Wandsworth-road, S.W., "Macaulay" telephone exchange, plumber: J. C. Spooner & Son, London, E.C.
Worthing P.O., etc., erection: Wilson, Lovatt & Sons, Ltd., Wolverhampton.

ENGINEERING SERVICES.

Manchester, "City" telephone exchange, heating: G. Dawson & Sons, Manchester.
South Kensington, S.W., Imperial College of Science, wiring: Electrical Installations, Ltd., London, E.C.
H.M. Stationery Office Stores, S.E., heating extension: Cannon & Hefford, London, S.E.

PAINTING.

Campbell, Smith & Co., Ltd., London, W.; Frisby, Dyke & Co., Ltd., Liverpool; W. E. Greenwood & Son, Ltd., London, N.W.; The Mond Staffordshire Refining Co., Ltd., London, S.W.; Stephenson Bros., Newcastle; Sykes & Son, Ltd., London, W.C.; F. Troy & Co., Ltd., London, N.W.

"HENDERSON"
SLIDING DOOR GEAR
FOR FACTORIES, GARAGES, SCHOOLS, ETC.,

"TANGENT JUNIOR" FOR LIGHT DOORS
"TANGENT SENIOR" FOR HEAVY DOORS.
WRITE FOR BOUND CATALOGUE B.26 TO:
P.C.HENDERSON, LIMITED.
TANGENT WORKS, BARKING, ESSEX.

¶London.—Tenders accepted for August by H.M. War Office:—

BUILDING WORKS AND SERVICE.

Farnborough, Pinehurst Barracks, store and boiler room: Norris & Co. (Builders), Ltd., Sunningdale.
Caterham, Guards Depot, alterations and additions to officers' mess and quarters: E. J. Logan, London, W.C.
Gosport, Fort Fareham, erection of officers' quarters: John Hunt, Ltd., Gosport.
Netley, operation and X-ray block: J. F. Gamble, Lyndhurst.
Catterick Camp, water supply: D. Thomson & Sons, Ltd., Carlisle.
Warley, artificers' work: S. Cronin & Sons, Warley.
Blackdown, married officers' quarters: Housing Corporation of Great Britain, London, S.W.
Larkhill, quarters: W. E. Chivers & Sons, Ltd., Devizes.
Longmoor, married soldiers' quarters: T. H. Jones, Farnborough.
Woolwich Arsenal, glazing work: W. H. Heywood & Co., Ltd., Huddersfield.
Catterick Camp, repairs to roads: H. Coxhead & Co., Ltd., Middlesbrough.
Derby, Normanton Barracks, drill shed: A. Holmes & Sons, Ltd., Burton-on-Trent.
Newcastle-on-Tyne, services at Fenham Barracks: W. T. Pickering, Stockton-on-Tees.
Strensall Camp, warrant officers' quarter: J. W. Maw & Sons, Ltd., York.
Dover, West, periodical services: C. J. Else & Co., Matlock.
Dover, Citadel Barracks, company offices, etc.: R. J. Barwick, Dover.
Lydd, periodical services: G. E. Greenwood & Son, London, N.W.
Weedon, Northampton and Bedford, periodical painting: Pickles & Ayland & Co., Ossett, Yorks.
Parkhurst Barracks, Isle of Wight, Group V., officers' quarter: H. Moger, East Cowes.
Isle of Wight Barracks and Forts, periodical painting: J. J. Hamiton, Louth.
Parkhurst Barracks, Isle of Wight, provision of w.c.'s: Sims & Co., Ventnor.
Oxford, Cowley Barracks, reappropriation of regimental institute to military hospital: Wm. Griffiths, Sons & Cromwell, Ltd., London, W.C.
Oxford, Cowley Barracks, reappropriation of military hospital to regimental institute: Wm. Griffiths, Sons & Cromwell, Ltd., London, W.C.
Arborfield Cross, bachelor dining room and kitchen: W. Laughton, Bedford.
North Aldershot, Marlborough Lines, periodical services: F. Holdsworth, Ltd., Shipley, Yorks.
Artificers' work at Fort George: K. Chisholm, Inverness.
Artificers' work at Inverness: H. Fraser, Inverness.
Chatham and Maidstone, painting: A. A. McDermott, Bradford.
Kneller Hall, Royal Military School of Music, erection of regimental institute: J. B. Edwards & Co., London, W.
Woolwich, repairs to roads: J. B. Edwards & Co., London, W.
Woolwich, Royal Herbert Hospital and Lower Gun Park, repairs to roofs: A. King & Co., London, S.W.
Woolwich, Royal Military Academy, repointing brickwork: A. King & Co., London, S.W.
Woolwich, Royal Artillery Barracks, repointing and repairing brickwork: G. Greenwood & Sons, London, S.W.
Catterick Camp, erection of bedding store: A. Bull & Co., Ltd., Doncaster.
Catterick Camp, extension to power station workshops: Tarran & Ayre, Hutton Rudby, Yorks.
Derby, Normanton Barracks, periodical services: R. Skevington & Sons, Derby.
Tynemouth, erection of R.E. workshops and technical store: Stephen Buy, Newcastle-on-Tyne.

London.—Alterations to the premises of Messrs. Wheeler & Co. (London), Ltd., 14, Poultry, E.C.2. Mr. Edgar Underwood, F.R.I.B.A., architect, Queen-street, E.C.:—

*Gower, Ltd., London.

Manchester.—Additions to offices at Clapham-street, Moston, for Johnson, Clapham & Morris, Ltd. Mr. P. Barker, F.R.I.B.A., architect, 32, King-street West:—

*L. Fairclough, Ltd., Adlington, Chorley.

Manchester.—Private chapel to the buildings for the Trustees of the Home for Aged People, Whalley-road and Carlton-road, Whalley Range, Manchester. Mr. Harold Greenhalgh, architect, 15, Mawdesley-street, Bolton:—

*W. Makinson & Sons, Ltd., Horwich.

Manchester.—Additions to the works, for Messrs. Thomson & Co., Back Mill-street, Ancoats, Manchester:—

*C. H. Schofield & Sons, Prestwich.

Manchester.—Branch in Elm-street and Water-street, for Messrs. McCrackens, Ltd., Bronte-street, Liverpool. Mr. A. Simpson, architect, 12, Muskel-avenue, Ainsdale, Southport:—

*J. H. Parish, Ltd., Manchester.

Manchester.—Reconstruction of premises in Peter-street, South-street and Bootle-street, and additions for, Messrs. Fothergill & Harvey, Ltd., St. Peter's-square. Messrs. Cruickshank & Seward, A.R.I.B.A., architects, 19, Booth-street:—

*Peace & Norquoy, Ltd., Ancoats.
Sprinklers—
*Mather & Platt, Ltd., Newton Heath.

Manchester.—Stores, offices and garage in Croft-street, Clayton, for Mr. J. Waddicor. Mr. A. J. Hoyland, L.R.I.B.A., architect, 32, King-street West:—

*J. Riley & Son, Manchester.

Manchester.—Dining-room on the roof of offices in South-parade, Southgate, and St. Mary's Parsonage, for the English Sewing Cotton Co., Ltd. Mr. H. S. Fairhurst, F.R.I.B.A., architect, 55, Brown-street:—

*R. Carlyle & Co., Ltd., Old Trafford.

Manchester.—Additions to works of Messrs. Richard Johnson & Nephew, Ltd., Forge-lane:—

*D. Anderson & Son, Ltd., Stretford.

Manchester.—Building containing shops, office and warehouse in Brook-street, Chorlton-on-Medlock, for Messrs. Harrison & Killey. Messrs. J. H. Andrews & Butterworth, L.R.I.B.A., architects, 9, St. James'-square:—

*J. H. Billings & Co., Manchester.

Joiners—
*D. Walton & Co., Pendleton.

Plumber—
*R. Crabtree, Manchester.

Manchester.—Alterations and additions to their printing works at Darley-street and Park-street, Ardwick, for the Allied Newspapers, Ltd. Mr. A. Rangeley, L.R.I.B.A., architect, 4, Cathedral-gates:—

*A. Hodkinson, Ltd.

Joiner—
*G. Macfarlane & Sons, Ltd.

Steelwork—
*Edward Wood & Co., Ltd.

Concreter—
*Lancashire Brunswick Rock Asphalte Co., Ltd.

(All of Manchester.)

Manchester.—Structural alterations to premises 101 to 115, Great Ducie-street, Strangeways, for Messrs. W. Timpson & Sons, Ltd. Messrs. W. Johnson & Sons, architects, 27, Oldham-road, Miles Platting:—

Brickwork—
*G. & W. Smith, Chorlton-on-Medlock.

Joiners' work—
*Tinker & Young, Ltd., Newton Heath.

Heating—
*T. H. Higson, Nicholas Croft.

Electrician—
*Hubbard & Williams, Newton Heath.

Two Electric Lifts—
*Etchells, Congdon & Muir, Ltd., Ancoats.

Manchester.—Reinstatement of the factory in Stockport-road, Longsight, Manchester, for Messrs. W. & H. Pownall, Ltd.:—

*T. Campion & Sons, Ltd., Manchester.

Steelwork—
*Robinson & Kershaw, Ltd., Manchester.

Manchester.—Erection of the North Manchester High School for Boys, Moston, for E.C. Education Offices, Deansgate, Manchester:—

†S. & J. Smethurst, Ltd., Oldham.

Manchester.—Extensions to premises of the Co-operative Society, Ltd., Grosvenor-street:—

*W. Storr & Sons, Stalybridge.

Steelwork—
*Robinson & Kershaw, Chorlton-on-Medlock.

Plumbing—
*H. Coop, Ashton-under-Lyne.

Plastering—
*J. Bower, Stockport.

Slaters—
*Wild & Sons, Ashton-under-Lyne.

Painting—
*Rigby & Son, Dukinfield.
*MacLellan, Ltd., Glasgow.

Manchester.—Erection of Birchfields-road Municipal school, for the E.C.:—

†H. Matthews & Sons, Ltd., Manchester.

Manchester.—Erection of Kingsway Municipal school, Burnage, for the E.C.:—

†Smith & Briggs, Ltd., Manchester.

Manchester.—Erection of Gorton Aspinal Municipal school, for the E.C.:—

†E. Marshall & Sons, Ltd., Ashton-under-Lyne.

Manchester.—Erection of Hough-road Municipal school, Withington, for the E.C.:—

†Smith & Briggs, Ltd., Manchester.

Meath.—Work at the infirmary bathroom, for the Meath County Infirmary Committee:—

Russell & Sons	£273
J. Denning	262
*F. Delaney	227

Millbrook.—Factory buildings for the Ardath Tobacco Co. Messrs. Gutteridge & Gutteridge, FF.R.I.B.A., architects, 9, Portland-street, Southampton:—

*Grace & Marsh, Waddon.

Minster.—Painting and decorating work at the Poor Law Institution, for the Isle of Thanet B.G.:—

*T. E. Bax, Ramsgate £347

Newcastle-upon-Tyne.—Three combined shops and houses, for the Corporation:—

*H. Kindred £2,694

Newcastle-on-Tyne.—Warehouse premises in Algernon-road, for Messrs. Ringtons, Ltd. Mr. S. J. Stephenson, architect, 2, Saville-place:—

*Thomas Clements & Sons, Ltd., Jesmond.

Steelwork—
*Vaughan & Dymond, Newcastle-on-Tyne.

Stoneworks—
*John Lant, St. Anthony's.

Plumbing—
*M. Charlton, Newcastle-on-Tyne.

Heating—
*Leake, Newcastle-on-Tyne.

Painting and Glazing—
*Hopper & Sons, Dunston-on-Tyne.

Electrical Installation—
*Falconer, Cross & Co., Newcastle-on-Tyne.

Lifts—
*Waygood-Otis, London.

Windows—
*Crittall, Braintree.

Northampton.—Rebuilding premises in Conduit-street and Market-lane. Mr. G. H. Allen, F.R.I.B.A., architect, 26, Abingdon-street:—

*A. P. Hawten & Sons, Ltd., Northampton.

Oldham.—Branch premises of the Westminster Bank, Ltd., at Yorkshire-street. Mr. A. Sisley, L.R.I.B.A., architect, Deansgate, Manchester:—

*Partington & Sons, Chadderton.

Steelwork—
*Edward Wood & Co., Manchester.

Joiners—
*Henshall & Sons, Oldham.

Heating Installation—
*E. Hatton & Co., Ltd., Manchester.

Marble and Terrazzo Floors and Tiling—
*Conway & Co., Manchester.

Metal Casements—
*Crittall Manufacturing Co., Ltd., Stretford.

Concrete Floors—
*Pearson Bros. & Campbell, Ltd., Liverpool.

Oley.—Re-roofing 33 and 35, The Oval, for the U.D.C.:—

*J. Shepherd.

Pollokshields.—Reconstruction of the Synagogue. Mr. J. B. Wright, architect, 1, Blythswood-square, Glasgow:—

Mason—
*R. Gibson.

Wright—
*Dick & Benzies.

Plasterer—
*Struthers & Son.

Plumbing—
*H. Twaddle & Sons.

Lighting—
*J. Forsyth.

(All of Glasgow.)

Portsmouth.—Office and mill premises for Messrs. Lillie & Co. Mr. E. H. Harvey, architect, The Square:—

*S. Salter, Southsea.

CHAIRS
FOR ALL PURPOSES
STRONG & INEXPENSIVE.

GEO. M. HAMMER & CO. LTD
CROWN WORKS, ST. JAMES'S RD.
BERMONDSEY, LONDON, S.E.16.

Ramsgate.—Pavilion in La Belle Alliance Square Gardens, for the Corporation. Borough Engineer:—

G. Mirioms & Son	£369 12 6
W. W. Martin	333 0 0
C. Stead	331 15 8
J. B. Sharman, Ltd.	298 0 0
Grummant Bros.	298 0 0
G. J. Attwood	296 0 0
Darby & Martin	260 0 0
*P. Hogben	257 10 0

(All of Ramsgate.)

Ripon.—Conversion into water closets of 32 pail closets and 37 privies, situated in the City, for the T.C. Mr. R. D. Irving, Sanitary Inspector:—

*Gowland & Young, Ripon £495

Rye.—Workmen's dwellings at Broad Oak, Brede, for the R.D.C. Mr. H. M. Jeffery, Building Surveyor, 1b, Havelock-road, Hastings:—

J. Perigoe & Sons, Northian	£4,173 16
Martin & Ashdown, Brede	2,400 0 (2 pairs)
Finnell, Rye	2,300 0 (2 pairs)
A. E. Goodsell, Hastings	1,904 0 (2 pairs)
W. Piper, Hastings	5,331 0
H. & J. Taylor, Hastings	5,280 0
A. Radcliffe, Hastings	5,212 0
Ellis Bros., Rye	4,408 0
R. Cook & Sons, Ltd., Crawley	4,392 0
G. Tasker, Rye	4,280 0
J. Asbenden, Rye	3,740 0
*Harman & Marriott, Rye	2,592 13

St. Helens (I. of W.).—6 non-parlour type houses at St. Michael's-road, for the U.D.C. Mr. C. Pursey, F.S.I., Surveyor:—

*W. J. Attrill, Sandown (Isle of Wight) £2,548

Sale.—Additions and alterations to the lodge in Sale Park, for the U.D.C. Mr. E. Bleakley, district surveyor:—

*P. Rowles, Sale.

Seaford.—Redecoration of the golf clubhouse, for the U.D.C. Surveyor:—

Harding Bros.	£417 5 0
C. Pettitt	415 18 0
Pettitt & Son	398 7 9
*H. Green & Son	389 18 6

(All of Seaford.)

Sheffield.—Shops in Penistone-road and Leppings-lane. Messrs. Fowler & Marshall, architects, Hartshead:—

*H. S. Randall, Ltd., Sheffield.

Sheffield.—94 houses on the Longley estate (No. 15), for the Corporation. Mr. W. G. Davies, F.R.I.B.A., City Architect:—

*H. Freckingham & Sons, Sheffield (37).
*M. J. Gleeson, Ltd., Sheffield (57).

Southport.—New X-ray department at the New Hall Isolation Hospital at Scarisbrook, for the T.C. Mr. A. E. Jackson, Borough Engineer:—

*Jonathan Partington, Ltd., Middleton Junction.

Southwell.—Erection of a new All Saints' Church at Clipstone. Mr. Louis Ambler, F.R.I.B.A., architect, Temple-chambers, Temple-avenue, London, E.C.:—

*Booth & Sons, Banbury.

Heating—
*Foster and Pearson, Nottingham.

Stockport.—Painting the interior and exterior of the covered market and the exterior of the weights and measures offices, for the Memorial Tolls Committee. Mr. H. Hamer, Borough Surveyor:—

*Barber & Rigley, Stockport.

Stoke-on-Trent.—Repairs to five houses at Longton, for the City Council:—

*J. W. S. Harrington, Hanley £249

Swindon.—Additional works at the Rodbourne sewage works. Messrs. John Taylor & Sons, engineers, Caxton House, Westminster:—

*W. & G. French, Essex £33,020

Tendring.—Alterations and additions to the Institution, for the B.G. Mr. F. G. Vincent-Brown, architect and surveyor, Dovercourt Bay:—

*C. H. Jones, Frinton-on-Sea £839

Todmorton.—New casual wards for men, etc., at Stansfield View, Todmorden, for the B.G. Mr. J. E. Stott, L.R.I.B.A., architect, Bridge-street:—

Mason, etc.—
*Dryland & Preston, Littleborough £3,049 10 6

Carpenter and Joiner—
*J. A. Gibson, Hebden Bridge ... 699 6 8

Plumber and Glazier—
*A. Woodhead, Todmorden 614 3 3

Slater and Plasterer—
*T. Sutcliffe & Sons, Todmorden 329 0 0

Painter—
*A. Goggs, Todmorden 77 13 9

CO TO 'TURPINS' for your
PARQUET, HARDWOOD & BLOCK FLOORS
and have no more trouble!
The House with over 60 years Reputation
TURPIN'S PARQUET FLOORING CO.
25, Notting Hill Gate, London, W.11
Estd. 1868 (Booklet, etc., on request)

WHY HAVE DOORS THAT BANG!
"ODOORO"
FITTED TO YOUR DOORS WILL
PREVENT SLAMMING & RATTLING
THE Fitting for Every Home and Office.
WILL LAST A LIFETIME.
EASILY FITTED TO ANY DOOR.
Made in four sizes—1-2-3 & 4 inch.
For particulars apply:—
C. LOVE & SONS, BEMBRIDGE, I.W.

HOSPITAL & SCHOOL STOVES
SOLE MAKERS OF
WRIGHT'S IMPROVED AND ALSO
SHORLAND'S PATENT WARM AIR
VENTILATING PATTERNS.
GEO. WRIGHT (LONDON) LTD
19 NEWMAN ST OXFORD ST. LONDON W.1
WORKS - BURTON WEIR ROTHERHAM

J. GLIKSTEN & SON
LIMITED
Specialities in
SEASONED
HARDWOODS
MAHOGANY WALNUT
JAPANESE, AMERICAN and
WAINSCOT OAK, TEAK,
WHITEWOOD, &c.
REGISTERED OFFICE AND WHARF
CARPENTERS RD.
STRATFORD
LONDON E.15
Telephone: EAST 3771 (5 lines)
Telegrams: GLIKSTEN 'PHONE LONDON

Towcester.—Alterations and additions to Pitt-lane C.E. school, for the Trustees. Messrs. Blackwell & Ridley, F.R.I.B.A., architects, Gold Street-chambers, Kettering:—

*J. T. Powell, Northampton £3,429

Wakefield.—Sanitary annexe at Wakefield Mental Hospital, for the West Riding Hospitals Mental Board. Mr. W. E. H. Burton, architect and engineer. Mental Hospitals Board Offices, Wakefield. Quantities by the architect.

*G. Crook & Sons, Ltd., Wakefield £2,361 2

Wareham and Purbech.—Reinforced concrete bridge at Bryantspuddle, for the R.D.C. Mr. A. Hunt, engineer, Offices, 16, West-street, Wareham. Quantities by the engineer:—

Norman Buckley, Weymouth ...	£3,375 10 6
T. Vale & Sons, Ltd., Stourport	3,458 0 0
The Demolition and Construction Co., London	3,345 12 11
Turner & Co., London	3,466 3 1
Christiani & Nielsen, London ...	4,736 11 9
Lester Construction Co., Ltd., London	5,001 0 0
Johnson's Reinforced Concrete Eng. Co., London	3,243 0 0
F. Bevis, Ltd., Portsmouth	3,662 0 0
*A. E. Farr, London	3,348 0 0

Watchet.—Hall for the Salvation Army. Mr. Arthur Rowe, architect, 101, Queen Victoria-street, E.C.4:—

*William & Bowden, Watchet.

Windlesham.—Painting and decorating of the Council Offices, for the U.D.C.:—

*J. Viner £147 17 6

Wrexham.—32 non-parlour type houses on the Hightown housing site, for the T.C. Mr. J. England, Borough Engineer, 1, Grosvenor-road:—

Stephen Davies, Ponkey	£12,430 8
S. Mitchell, Cefn	12,384 0
O. D. Stephens, Bersham	12,212 0
H. V. Parker, Wrexham	11,816 0
Alun Edwards, Ffrith	11,936 18
Robt. Williams & Son, Brymbo ...	11,528 0
W. F. Humphreys, Ltd., Acrefair	11,430 0
Francis Roberts & Son, Trevor ...	11,248 0
Miles Bros., Rhos	11,120 0
Powell & Hughes, Acrefair	11,120 0
E. W. Gittins & Son, Aberderfyn	11,052 0
Jno. Gibson, Lavister	10,560 0
*G. F. Sumner, Pentre Broughton	10,817 0
Griffiths Bros., Rhos	6,192 0
W. H. Wycherley & Co., Pentre Broughton	5,989 3

Wrexham.—Motor bus garage, for the Wrexham Transport Co. Mr. Arthur Ashton, F.R.I.B.A., architect, 33, The Parade, Leamington:—

*John Hughes, Wrexham.

York.—Sub-station at Popleton-road:—

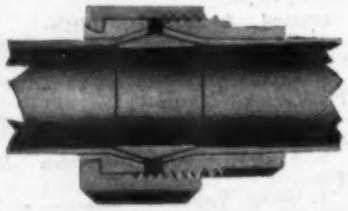
*Walter West, Ltd., York £256

J. J. ETRIDGE, JR. Ltd
SLATING AND TILING
SLATE MERCHANTS
CONTRACTORS
Inspections and Reports made on
OLD OR FAULTY ROOFS
in any part of the country.
Telephone: Bishopsgate 1944/5. or write.
Bethnal Green Slate Works,
BETHNAL GREEN, LONDON, E.

OAK FLOORING
WAINSCOT OAK
SQUARE-EDGED OAK
MAHOGANY, TEAK
WHITEWOOD, ETC.
SYDNEY PRIDAY & SNEWIN LTD.
Oak Specialists & General Hardwood Merchants
OAK WHARF, RAVENSDALE RD., N.16
Phone: CLISSOLD 6254 (3 lines)

FITZPATRICK & SON
MASONS & PAVIORS
PAVING WORK OF EVERY DESCRIPTION
Largest stock of Second-Hand and Redressed (equal to new) Granite Setts in London, at Rock-bottom Prices.
Rectangular and Crazy York Paving, Rockery Stone, Granite Chippings and Tarmacadam.
Spur Stones to order.
Quadrant Blocks in stock.
454 OLD FORD ROAD, LONDON, E.3
'Phone—EAST 6336/7/8

HIGH CLASS FLOORINGS
OF EVERY DESCRIPTION.
WOOD BLOCK.
PARQUETRY.
SEASONED T.&G.
OAK, TEAK &
MAPLE FLOORINGS.
STEVENS & ADAMS LTD.
POINT PLEASANT,
WANDSWORTH,
S.W.18.
'PHONE: PUTNEY 4701 (3 LINES)

Do you wish to save money on H. & C. Water Service?
"SECUREX"
PATENT FITTING FOR
COPPER TUBES.

If so, use Light Copper Tubes and "Securex" Fittings instead of Lead and Iron.
SAVING 25 per cent.
"Securex" Fittings make the ideal joint. Simple to fix. Easy to take apart and refix. ASK FOR PRICE LISTS
FREDK. BRABY & CO. LTD. FITZROY WORKS
352 TO 364, EUSTON ROAD, LONDON, N.W.1.
And at DEPTFORD, LIVERPOOL, BRISTOL, PLYMOUTH, GLASGOW, MOTHERWELL, FALKIRK, BELFAST & DUBLIN